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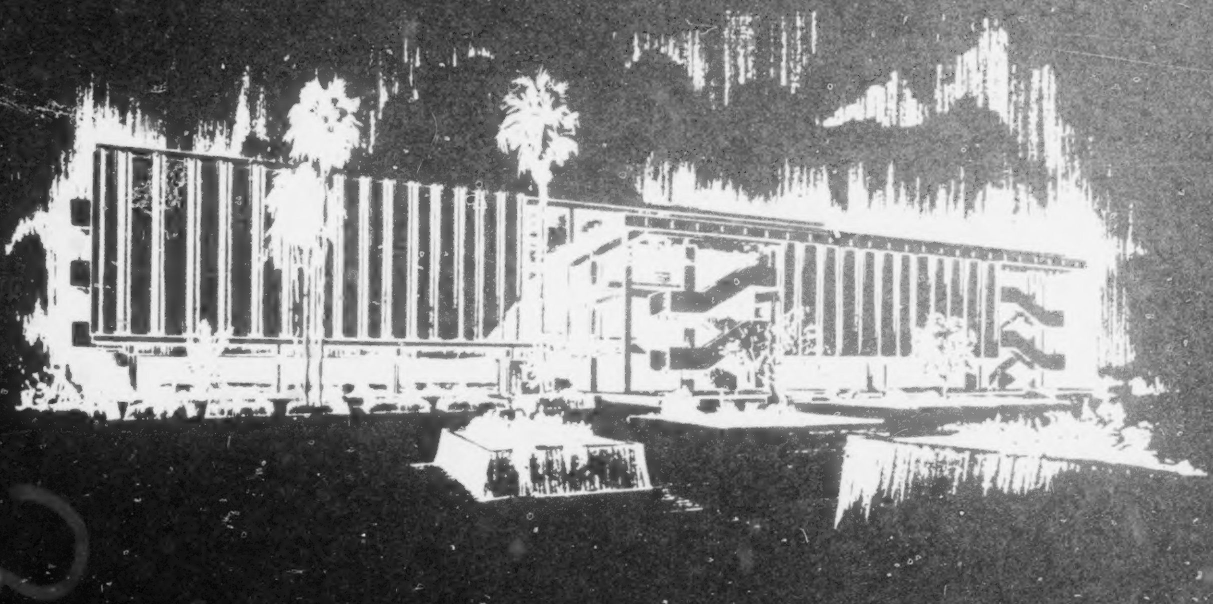
ARIZONA BUSINESS



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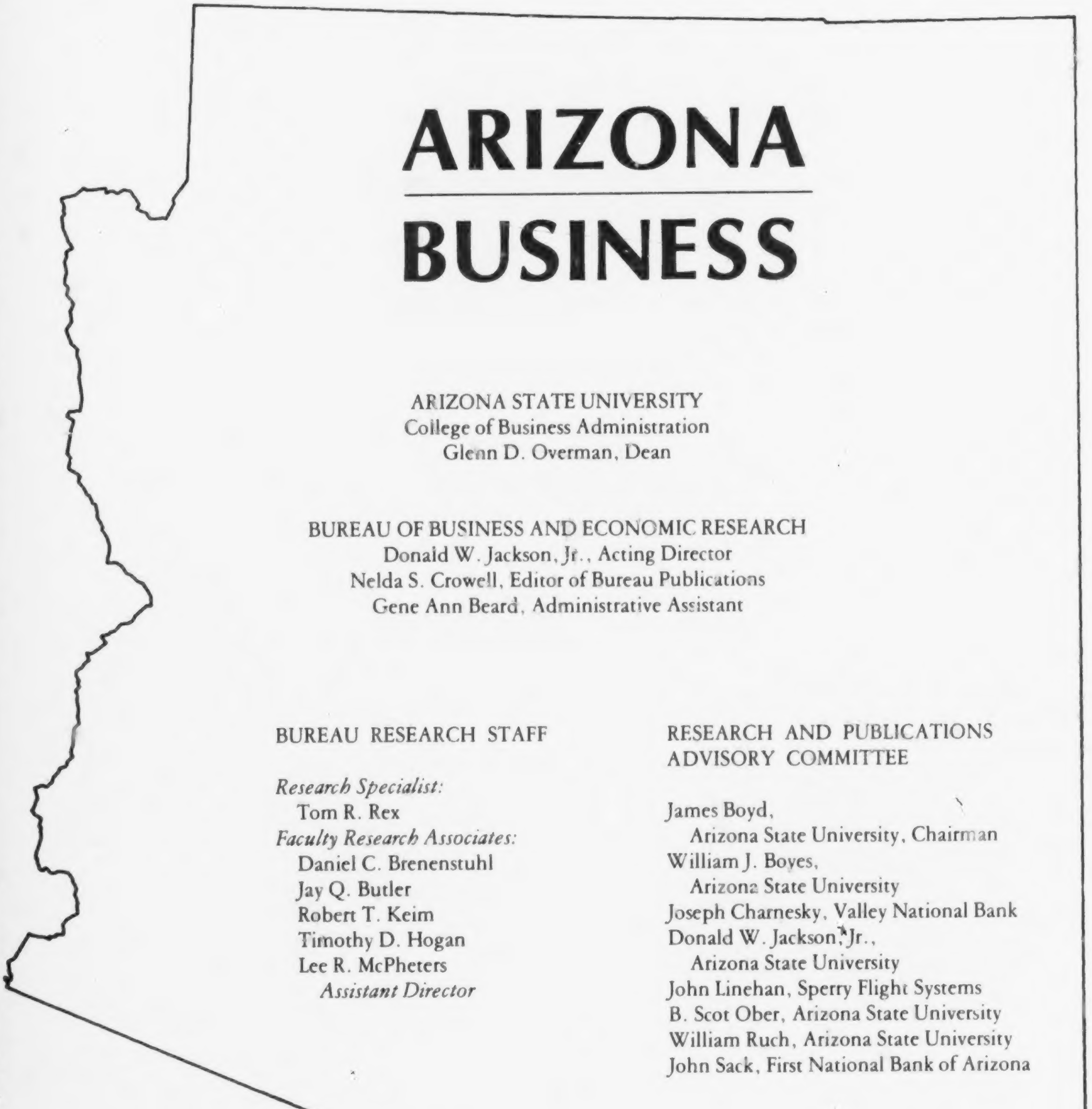

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Report To The Reader

Attention, managers of the future! Be prepared for change! In this issue of *Arizona Business*, four professors in the Arizona State University Department of Management look at the directions and extent of some changes that managers can expect in the next two decades. Following are some of their observations:

- One of the most pressing problems is increasing productivity. Maintaining our current level of productivity is insufficient; productivity must increase.
- The service industries will continue to employ an increasing percentage of the work force.
- Greater emphasis in manufacturing will be given to processes that are material and equipment intensive.
- Assuring material supply availability will assume a major position in corporate planning. This requires more sophisticated forecasting techniques, consideration of technology alternates, and innovative solutions to supply availability. Firms must keep a watch on the geopolitical situation.
- Pressures from government and affected groups will expand the scope of equal employment opportunity.
- Fringe benefits are growing. Not only will employers be asked to pay a larger share of fringe benefit costs, but the list of benefits will grow.
- In the year 2000, the labor force will be older, better educated, and comprised of a greater proportion of women and minorities, and single parents.
- Organizations will become even more dependent on scientific and technical knowledge.

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Editor's Note: The Metropolitan Phoenix Consumer Price Index and the Food Price Index are cosponsored by Valley National Bank. This information was inadvertently omitted from the CPI tables and the food price tables in the March issue of *Arizona Business*. Their service in cosponsoring these studies is appreciated.

CALL FOR PAPERS

International business will be the theme of a future issue of *Arizona Business*. Authors who wish to submit articles for this issue should send them to *Arizona Business*, Bureau of Business and Economic Research, College of Business Administration, Arizona State University, Tempe, AZ 85281. Deadline is June 15, 1981.

Management to the Year 2000

HAROLD FEARON
WILLIAM REIF
WILLIAM RUCH
WILLIAM WERTHER

Change is a fact of life in business, as in any human endeavor. If organizations, economies, and nations are to prosper, change must be recognized and adaptation must occur. The ability to forecast change with some degree of accuracy will enable managers to adjust more promptly and provide for more efficient resource use.

While no one can foresee the future with complete accuracy, the seeds of future change already have been planted and broad estimates of the direction and extent of change — and recommendations for action today to position the firm favorably for the future — can be made. To assist managers in better identifying the major changes that will take place in the next two decades, four specialists in the Department of Management at Arizona State University have made brief forecasts of the future in the areas of Productivity Management, Production/Operations Management, Human Resource Management, and General Management. It is hoped that this look at the future will assist managers in assessing the impact of the changes on the organization and in developing a workable strategy for adjusting and adapting to them.

PRODUCTIVITY MANAGEMENT

One of the most pressing and pervasive problems in the coming two decades is increasing resource productivity.[1] Productivity incorporates all aspects of management of organizations and its increase or decrease has profound effects on inflation, international competitiveness, employment levels, standards of living, and business failure rates. Maintaining our current level of productivity is insufficient; productivity must increase if we are to progress and survive in the rapidly changing world between now and the year 2000.

The Nature of Productivity

Productivity is defined as a ratio of output to input. Often the term is used to describe labor productivity — the comparison of goods and services produced relative to labor content (measured as units produced per hour, sales per employee, or shipments divided by payroll).

Total firm productivity, however, is a much broader concept, since it includes all resources consumed by the firm. In addition to labor, output can be compared to capital, material, or energy. Total productivity, then, is

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Uncertainty, transition, and change characterize the basic features of life in the decades ahead. If organizations are to perform efficiently and effectively under such conditions, managers must have keen diagnostic and problem-solving skills. They must be innovators, organizational designers, master strategists, and active participants in external affairs.

Harold Fearon, William Reif, William Ruch, and William Werther are all professors in the Department of Management, College of Business Administration, Arizona State University.

the output of the firm relative to the sum of labor, capital, material, and energy used. Efforts to improve productivity can be described accurately as "resource management" — *the effective and efficient use of all resources to produce salable output.*

The Problem

Productivity is often misunderstood. A corporate executive may equate productivity with profitability and attempt to judge productivity through financial statements. A plant manager may see it as production, the output side of the ratio only. An industrial engineer may see productivity improvement as a new description for work simplification. The human resource specialist relates the concept to motivation and satisfaction. The worker is often suspicious of productivity improvement programs, believing that they mean "work harder and work faster so that some workers can be laid off." Like the blind men with the elephant, each sees a part but not the whole.

Productivity should not be confused with financial performance of the firm. In a basic sense, profit is the difference between sales revenues and costs. Sales revenues are made up of quantities times prices and, similarly, costs are the sum of input quantities times their respective unit costs. If the revenue-to-cost ratio (profitability) is separated, the ratio of output quantities to input quantities is productivity. It measures the utilization of resources. The other part of the equation, the ratio of output prices to input costs, is called price recovery. It measures how much the firm is passing on cost increases to its customers and, ultimately, how much it is contributing to inflation.

Methods are being developed to measure organizational performance in terms of productivity. Eventually firms will be able to tell how much of their profit is due to gains in productivity and how much results from passing along cost increases and process inefficiencies in the form of higher prices.

With a better understanding and measurement of productivity, firms will be in a position to utilize resources more effectively. Working smarter, not harder, is the key. With sound organizational policies, productivity can lead to successful sharing of benefits by all members of the organization.

Declining National Productivity

Since the end of World War II, productivity increased at an average rate of 3.2 percent until the early 1970s. In the mid-1970s, the growth rate dropped to less than half of the previous average. In 1978, growth was one-half of 1 percent and in 1979 productivity *declined* by almost 1 percent. If productivity growth had maintained its earlier 3.2 percent rate, our gross national product would be an estimated $400 billion larger.

No complete agreement exists on the reasons for the decline, but there are several major contributors. First is the changing nature of the work force; age, sex, education level, and attitudes toward work are changing.[2]

A second factor is interindustry shifts. A majority of the work force is now employed in service industries, which generally are more labor-intensive than manufacturing and less amenable to productivity improvement.

A third factor is government regulation. The time and resources required to assure compliance with government regulation represents a diversion from the production of goods and services.

A fourth factor is a combination of declining investment and declining research and development (R&D). The average age of plants and equipment in the United States is increasing, and older facilities are generally less productive. Cutbacks in R&D mean less innovation in product or process improvements; hence, a slowdown in productivity growth.

Although an individual firm may feel helpless in the face of these broad social problems, there is reason to be optimistic. Excessive government controls can be solved through our democratic process, and in the meantime individual firms can improve productivity through concerted efforts to react and adapt to a changing environment.

Increasing Organizational Productivity

Organizational productivity is complex; there are no simple answers. There are, however, guidelines to steer the firm toward more effective resource management.

Awareness. Becoming aware of the problem is the first step. Removing the many misconceptions associated with productivity can lessen resistance to change and focus efforts on improving the process and sharing the benefits.

Commitment. Top management must believe that productivity improvements can and should be made. A total organizational effort can only work effectively with a top-down approach.

Program. Although relatively few companies today have a formal productivity improvement program, the numbers are increasing. Changes in the formal organizational structure will be needed to accommodate new positions with specific duties and responsibilities for coordinating productivity improvement efforts.

Measurement. Productivity measurement at all levels of the firm is possible. Productivity measurement systems need to be developed, refined, and integrated with financial measurement and management information systems to guide and evaluate resource management.

Innovative Management. Productivity improvement is a way of judging the performance of a worker or an organization. The success of creative management of tomorrow's work force and complex technology will be measured by whether it produces substantial growth in productivity.

PRODUCTION/OPERATIONS MANAGEMENT

While Production/Operations Management (P/OM) is central to the functioning of any organization, the period following World War II until the mid-1970s saw this activity receiving relatively less emphasis than the marketing and finance functions, which then were in vogue. However, concerns about productivity and the reindustrialization of America, and the changing geopolitical scene have again focused significant attention on P/OM as an area of needed emphasis if we are to maintain or improve our standard of living and become more competitive in the world marketplace.[3]

Growth of Service Industries

The service industries such as health care, personal care (like the beauty shop), and fast-food preparation will continue to increase in importance and will continue to employ an increasing percentage of the work force (probably two-thirds of the work force by the year 1990). This will cause a switch in our emphasis on manufacturing methods. The service industries have not received adequate attention in the past — they are more difficult to analyze — but service industry worker productivity, and increases in that productivity, will be one of the keys to the ability to maintain our overall standard of living in the decades ahead.

Emphasis on Material- and Equipment-Intensive Production

Greater emphasis in manufacturing will be given to material- and equipment-intensive production processes. Presently, United States manufacturing firms spend about 57 percent of their sales income for the purchase of materials, supplies, and services; that number was 51 percent only six years ago. When dollars spent for new plants and equipment are added in, that number goes to 61 percent and will probably be 68 to 70 percent by the year 2000. This trend is occurring because of the need for manufacturers to substitute equipment for labor in order to increase productivity. This emphasis on materials and equipment may not be necessary in the economies of the lesser-developed and underdeveloped nations due to their relatively lower employee costs. The United States, however, must recognize the current emphasis and take action to control expenditures more closely for materials to provide maximum value for dollars spent if it is to be competitive.

Inventory Planning

At present, inventory represents about 30 percent of assets in a manufacturing company, and is often a larger resource investment than any other asset category (cash, accounts receivable, plant and equipment). The very high inventory carrying costs make it imperative that inventory planning and control decisions hold inventory investment within rather narrow limits. The trick is to develop planning and scheduling accuracy that will meet internal manufacturing demands and guarantee the satisfaction of the customer while minimizing inventory investment at the same time. Today's carrying cost for inventory is estimated at 30 to 36 percent of value per year, which has a pronounced effect on a firm's return on investment. Also, tight inventory control enables a firm to weather the shocks from cyclical economic downswings, since production need not be severely reduced to eliminate excessive stocks.

Production Control Systems

Better systems of controlling production schedules and resultant inventories will be perfected. Much attention is now being directed toward the use of computer-based planning and control systems, which are typically referred to as MRP (Material Resource Planning) systems. MRP systems are based on the idea of "driving" production, purchasing, and inventory systems by "dependent demands" through an interdependent system, rather than attempting to plan and control each element of the individual system independently. While such an approach has been possible for several years, three developments will make MRP most attractive in the next few decades: (1) lowered data processing costs with the advent and application of mini- and micro-computer systems, (2) increasing costs of carrying inventory, and (3) uncertainty of material supply, which requires faster reaction times to supply interruptions and shortages.

Computer-Based Management Information Systems

The production/operations manager (P/O) will make much more extensive use of computer-based management information systems (MIS). In many firms today, the P/O manager is forced to make decisions on work and worker scheduling, allocation of scarce resources, and the application of pressure on the system, based on incomplete, inaccurate, and/or obsolete data. Production decision making moves rapidly, and the tempo will likely become faster as automation increases. Thus, firms must utilize data systems that are more responsive and which give the manager needed data on demand through a readout screen located at the workplace. The technology for this is already available.

Price Escalation

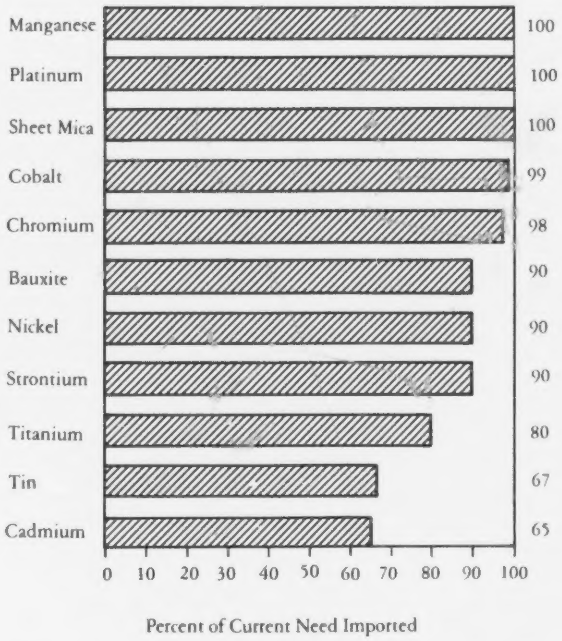
Rapid escalation of material input prices (costs) will continue. Much attention will be given, through the use of relatively sophisticated purchasing decision systems, to predict and control material costs better. Prices are likely to increase, overall, at rates substantially above those experienced in the 1960s — the long-term price increase rate over the period of 1980 to 2000 will probably average in the 5 to 6 percent range. Ways to minimize the effects of such cost increases on the major resource inputs to the manufacturing systems must be developed if United States industry is to be competitive.

Availability of Supply

Assuring material supply availability will assume a major position in corporate planning. This requires much more sophisticated forecasting techniques, consideration of technology alternates, and innovative solutions to supply availability. At present, the United States imports a major percentage of its needs for many crucial materials from foreign sources (see Figure I). If the supply of several of these items were denied to the United States, it would make the oil crisis of the 1970s look trivial.[4] Firms must keep a much closer watch on the geopolitical situation, particularly in southern Africa and the Middle East, to avoid unpleasant surprises. The possibility of developing supply sources in countries such as the People's Republic of China must be explored. More instances of backward integration, such as the G.E./Utah International merger, to protect material supply lines will take place. While the investment may be substantial, it may be the only choice to reduce uncertainty of supply. Buying firms must develop closer relations with vendors, which will be facilitated by joint computer/data systems. Incidentally, this may force a new look at existing interpretations of antitrust regulations as they apply to combinations in restraint of trade.

FIGURE I

U.S. DEPENDENCE ON FOREIGN SOURCES FOR STRATEGIC MATERIAL NEEDS



Sources: U.S. Bureau of Mines; U.S. Geological Survey; A. D. Little, Inc.

Longer Planning Horizons

Manufacturing and materials planning horizons will substantially stretch out. In the past, most of the planning effort was directed at product development and marketing. While these will not diminish in importance, in the next twenty years strategy and materials acquisition planning will receive greater attention, and the need for people with these skills will be apparent. Last year the undergraduates with a purchasing/materials management specialty graduating from the College of Business Administration at Arizona State University received the highest average salary of any discipline in the College. Firms must have personnel who can do manufacturing and materials acquisition planning on a ten or twenty year planning horizon consistent with the market planning horizon. A good marketing plan will be profitable only if the firm can produce products or services as needed to meet that plan.

Many challenges face the production operations manager in the 1980s and 1990s. The competitiveness of firms, and the United States economy as a whole, will depend on the accuracy of manager forecasts, sensitivity to changes, and the ability to react and adjust managerial methods to meet the changing environment.

HUMAN RESOURCES MANAGEMENT

The management of human resources will undergo significant changes during the remainder of this century. These changes will reflect an evolution of present trends, but their cumulative impact will alter the employer-employee relationship radically.

Equal Employment Opportunity

Regardless of changing national leadership, pressures from government and affected groups will almost certainly expand the scope of equal employment opportunity (EEO). At present, only federal government contractors and agencies of the executive branch are required to develop Affirmative Action programs for the qualified handicapped. All but the smallest employers, however, can expect legally-mandated programs for the qualified handicapped in the future. Employers also can expect even more vocal pressure for equal employment opportunity from Hispanics — the fastest growing minority group. Later in the 1980s, gay rights groups are likely to demand legislative support for equal employment opportunity. Perhaps the most dramatic issue will be equal pay for *comparable work*. At present, employers must pay men and women equally for similar jobs. However, the Equal Employment Opportunity Commission (EEOC) has under active consideration a requirement that employers pay equal wages for comparable work. If this concept is adopted, the EEOC may require employers to pay jobs that are female-intensive, e.g., secretaries or nurses, at a level comparable to jobs that are male-intensive, e.g., mechanics or staff specialists.

Benefits and Compensation

According to the United States Chamber of Commerce, fringe benefits already amount to more than one-third of employer labor costs and are growing. A continuation of this trend may cause benefits to be the major element of labor costs during the next two decades. Not only will employers be asked to pay a larger share of fringe benefit costs, but the list of benefits will grow. Likely additions include dental, optical, legal, mental health insurance, and employee assistance programs.

A growing number of organizations are adding "employee assistance programs" that offer rehabilitation, counseling, or referral to community professionals for alcohol and drug abuse, marital and family problems, emotional disorders, housing, and welfare advice for the "working poor." Many of these programs also are available to the workers' families.

In future years, more employers are likely to extend "cafeteria benefit programs" to all workers. These programs — previously reserved for top management — allow each employee to select the types and mix of fringe benefits he or she wants.

Experts in financial compensation will encounter growing problems with "wage compression," which occurs when minimum or entry level wages rise faster than the remainder of the salary structure. Compounding this problem will be continuing pressure by workers for cost-of-living raises to keep pace with inflation.

Union-Management Relations

After years of little growth, the union movement is undergoing noteworthy changes. Mergers among national unions are producing fewer, but financially stronger, labor organizations. At the same time, older union leaders are stepping aside in favor of new leaders. Armed with new leadership and improved financial strength, selected unions may be poised for significant growth, especially if they can communicate their considerable success in protecting workers from inflation through cost-of-living clauses. Since many workers and professionals have seen real wages decline, unions may discover latent but widespread support for unionization similar to that of the 1930s.

Work Schedules

For over 200 years, the number of working hours has declined. Today, the traditional five-day, forty-hour work week is undergoing change. During the next twenty years, employers can expect rapid adoption of nontraditional work schedules. These changes will include greater use of:

Flextime — Schedules that permit employees to vary their starting and ending times.

Shorter Workweeks — Schedules that allow employees to work traditional forty-hour weeks in less than five days.

Part-Time — Schedules that enable workers to work less than forty hours per week.

Job Sharing — Schedules that allow two or more employees to share a single full-time job.

Flexyear — Schedules that permit employees to work full or part-time for less than a year.

Pressure for these innovations will result from changing work attitudes and a reduction in the growth of the work force as the lower birth rates of the 1960s and 1970s begin to affect industry

Even the tradition of "going to work" may be altered. As the work force becomes dominated by information-processing employees, more people will be able to work at home. They will form "electronic cottages" which will be "connected" to the employer through low-cost electronics such as satellite/ground station communications.

Human Resources Departments

Personnel departments are likely to experience explosive growth in size and importance. The changes previously discussed will cause them to become more involved in strategic business decisions through the development of human resources plans. Greater attention will be paid to career planning and human resources development in order to train and retain employees for the rapid changes of the next twenty years. These departments will also experience far greater pressures to justify their growing demands on employer resources.

The most significant challenge facing these staff units will be to contribute to organizational productivity. Besides improved employee communication programs, suggestion systems, and team building efforts, human resources departments will have to devise innovative ways to tap employee creativity and productivity if the national economy is to resume noninflationary growth.

GENERAL MANAGEMENT

Changes in the practice of management during the next twenty years will occur as a result of more fundamental changes in our society. Therefore, to chart the future direction of management, one must first become knowledgeable of the social, demographic, economic, and technological forces that will shape the nature and functioning of organizations.

Changing Values and Lifestyles

Work as a central life force, and dedication to the work ethic is no longer in vogue with many people. A leisure-oriented life style has replaced it, and people are actively seeking worthwhile experiences outside the work environment. This move is part of a broader trend to more hedonistic values. For those who still value work as a basic life orientation, demands for improvements in the quality of work life, including meaningful jobs and a higher degree of involvement in decisions are being made. And, personal values will increasingly be placed ahead of organizational objectives.

In response to changing values, management will be forced to place greater emphasis on human resources management and strategies for increasing worker productivity. Human resources planning, career planning, selection processes, and training and development activities will receive priority treatment. Job enrichment strategies will continue to be emphasized.

Team, or collegial, management will be practiced widely and more attention will be given to feedback systems that inform employers about organizational affairs. Formal relationships will be established in terms of work flow (horizontal) more than hierarchy (vertical). Authority by virtue of position will be deemphasized, and knowledge as a basis of authority will be emphasized. New management strategies, such as organizational behavior modifications, will be used to deal with the related issues of motivation and productivity.

Composition of the Work Force

Basic demographic trends indicate that in the year 2000 the labor force will be older, better educated, and comprised of a greater proportion of women and other minorities, and single parent wage earners. Seventy-five percent of the growth in the next twenty years will be in the 35 to 54 year age group, as compared to the 1960-80 period when 75 percent of the growth was in the under-35-year age group. Over 40 percent of the work force will have completed at least one year of college education. Equal rights for women and minorities will continue to promote their entry into the ranks of professional employees and management.

How will management deal with the social and organizational impact of the changing role of women, minorities, older employees, knowledgeable workers, and single parents as members of the work force? One approach is to tailor work systems to meet individual needs. There will be flexible benefit plans, work schedules, work locations, and retirement options.

At the same time that extrinsic rewards, such as pay, benefits, and working conditions, are being addressed, the intrinsic component of the organization's reward system will also change to keep pace with employees' demands for higher quality work experiences. It is known that better educated workers have a different self-image than less educated workers; they have a stronger sense of self-respect, are much less tolerant of authoritarian management practices, have higher expectations of what the job should provide, will strive for individuality and independence, are less committed or loyal to the organization, and can be motivated by appeals to professional codes and service norms. If management wants more than marginal productivity from its knowledgeable workers in the next two decades, it will have to make several changes. First, greater attention will have to be given to designing self-development opportunities into jobs. Management will also have to provide more opportunities for independent thoughts and actions. In addition, management must ensure workers a more direct involvement in corporate affairs through such concepts as rotating leader positions and junior boards of directors. Finally, work systems must be created that are geared to the needs of the whole person.

Technology

By the year 2000, organizations will become even more dependent on scientific and technical knowledge and the specialists who can apply a particular knowledge base. As dependency on technology increases, there will also be an increase in technological, or job, obsolescence. In certain high technology areas, the useful life of a knowledge base will be no more than two or three years.

Organizations are built on prevailing technology. Technology, in turn, is invariably linked to the structure and processes that are involved in converting resources (dollars, people, equipment, materials, and facilities) into products and services. Therefore, any significant change in technology will cause subsequent changes in the structure of the organization.

As the rate of technological change increases, organizations will have to respond accordingly in order to remain productive entities. Their ability to respond to rapid change will be highly dependent upon the use of temporary work systems. Organizations will be designed around the tasks to be done rather than around traditional hierarchical roles and functional definitions. Temporary networks and team structures will dominate the scene and will be constantly changing to meet the requirements of new technologies and the demands of increasingly complex operating environments. These temporary work structures will be somewhat similar to today's matrix organizations, which are designed to bring technical and functional expertise quickly to bear on a project or program. One of the keys to success will be the organization's lag time from invention to innovation, or putting the technology to work in such a way that the organization realizes a return on its investment. Today, lag time is commonly measured in years; in the future, months and perhaps weeks may become the norm for organizations that want to be first on the market.

As organizations become more highly specialized, the need for coordination increases. Without it, organizations stand to lose the potential synergistic effect of applied technology. Integrative mechanisms currently in practice include temporary task teams, cross-functional teams, coordination committees, and liaison positions. To be effective, they require the establishment of horizontal and diagonal communication channels to permit direct specialist-specialist relationships, the acceptance of expertise as a legitimate base of authority, and problem-solving capabilities that permit managers to move quickly from problem identification to solution.

In viewing technological change through the eyes of the individual contributor, the primary concern will be keeping abreast of new technologies and avoiding job obsolescence. To satisfy these requirements, management will have to make greater use of sabbatical leaves and other "lifelong learning" concepts, and be willing to build educational components into job designs. By the year 2000, many employees will spend one-third to one-half of their working lives actively involved in educational pursuits to gear up for the next generation of technology. Both individuals and organizations will have to change their thinking about what constitutes a working career.

Governmental and Societal Intervention

There will be a growing interdependency among all social institutions, particularly business, government, and education. At the same time, there will be a blurring of the traditional boundary between the public and private sectors. Government, business, and education will become, in a sense, a partnership working toward common goals.

The expanded role of government in the private sector will result in its: (1) guaranteeing the survival of key industries; (2) actively participating in high-risk, long-term ventures, such as energy alternatives; (3) increased decision making concerning resource allocations, such as subsidizing education and not health care; (4) significantly decreasing the range of acceptable competitive behaviors; and (5) assuming a larger role in interregional economic planning.

The related concepts of social responsibility, social accountability, and corporate constitutionalism will take on added significance. The corporation as a public trust, and management as trustee, will become a standard against which society will judge business' performance. Business will be expected to not only provide economic inputs to society, but to also assume a broader social function. For management to perform well in its new role, several changes must occur. First, managers will have to be more aware of the social implications of business decisions. In the past, business decisions were primarily made according to economic and technological criteria. In the future, social criteria will be weighed heavily in selecting alternatives. Social cost accounting will be as widespread as environmental impact studies are today. Income statements will account for social costs as business expenses. The concept of social profit, not economic profit, will be emphasized. Human resources accounting will be widely practiced, and the value of human resources will be reported and accounted for on balance sheets and annual reports in much the same way that plant and equipment and other fixed assets are treated today.

As more constituent groups become directly involved in business decisions, another dimension of complexity will be added to the decision-making process. Government will most likely insist that these constituent groups be represented on boards of directors and other policy-making groups. It will be common to see government, labor, education, consumer groups, community groups, minority groups, environmental groups, and quality of life groups all represented and demanding "ownership" rights.

Organization Size and Complexity

Within the next two decades, no more than two-hundred to three-hundred multinational firms will account for 50 percent of the world's output. This is realistic when one considers that General Motors is currently the twenty-second largest economic entity in the world, and there are other multinationals not far behind.

As organizations continue to increase in size, be they corporations, universities, labor unions, or government agencies, more questions will be asked — Can they be managed in a cost-effective manner? At what point does size alone dictate the beginnings of diminishing economic and social returns? Complexity tends to correlate with size. As the number of organizational components grows, the number of interactions increases geometrically. This, coupled with technology, will eventually create a situation in which people may lose their ability to comprehend what is happening in the series of dynamic events that constitute their work environment.

Two problems also related to size are inertia and dependence. As organizations get larger, they tend to resist changes in purpose or direction. Dependence relates to what happens if the organization fails. To illustrate, many businesses operate on the assumption that they have to be first or second in any particular market to realize a sufficient return on invested capital to survive in the long run. If this is true, and there is growing evidence that it is in high-technology industries, one can logically conclude that in the near future only a few firms will dominate most industries. Now, what if one fails, and it was the sole source of supply for health care, or automobiles, or building materials? Size can increase dependency by reducing the alternatives that are available.

Large-scale organizations can be managed, but not necessarily the same as in the past. One way to deal with the size and complexity issues is to rely more heavily on computer-based management information systems. They will handle most routine or programmable decisions, many of which are currently being made by technicians and lower- and middle-level managers. Decision makers will have instant access to information needed for developing and analyzing alternatives for nonprogrammable decisions. Also, simulation models will be widely used by managers to "try out" decisions before they are actually implemented.

Computer-based information systems and communication networks will lead to decentralization. This will allow the organization to improve the quality of decisions by moving the decision-maker to the point of implementation. At the same time, the advantages of economies of scale and effective utilization of functional expertise will not be compromised if all components of the system are linked to each other and the common data base. These resulting decentralized decision centers will not be rigid structures but will be added and deleted, contracted and expanded, and located and relocated as strategic requirements change. The organization may be similar to that of a honeycomb, with many cells operating as semiautonomous decision centers, linked together by a computer-based network. As conditions dictate, the organization will change shape but the integrity of the system will remain intact.

Turbulence As a Way of Life

Turbulence is expressed by words such as "the only constant is change," "managers make decisions under conditions of uncertainty," and "we are always in a state of transition." Uncertainty, transition, and change characterize the basic features of life in the decades ahead. The transitory state will become the norm and will closely approximate the systems concept of dynamic equilibrium. Change is related to time compression, especially as it applies to the rapid obsolescence of knowledge bases. Uncertainty is indicative of complex organizations operating in a complex environment with limited understanding of the critical factors and their causal interactions. If organizations are to perform efficiently and effectively under such conditions, managers must have keen diagnostic and problem-solving skills. They must be innovators, organizational designers, master strategists, and active participants in external affairs. Quick reaction times must be built into operating and technical systems and proactive capabilities developed for shaping external forces to ensure the long-run survival of the organization.

Managers will turn increasingly to strategic planning as a stabilizing force. Strategic planning is the process of setting objectives and developing action plans that anticipate and take into consideration internal and external forces or events that can affect the achievement of organizational objectives. Strategic planning in the year 2000 will require environmental scanning, e.g., technological forecasting, and interorganizational information systems capabilities far superior to today's monitoring systems.

Managers will also engage in more cooptative and coalitional relationships to control external forces and events that can affect organizational performance. Conscious attempts will be made to absorb outside forces into the structure of the organization and thus bring them under control. For example, including members from outside interest groups on boards of directors is one form of cooptation. The business-government-education partnership is a good example of a coalition. None of the parties are free to set objectives in a unilateral fashion, thus protecting the mutual interests of all parties concerned.

CONCLUSION

While not able to control the future, the manager can exert influence and adapt to a changing environment. Being aware of the changes taking place now and those likely to occur over the next two decades in the areas of Productivity, Production/Operations, Human Resources, and General Management will assist the manager in charting a course which will enable organizational survival and success. To do otherwise, in an age of transition, turbulence, and almost constant development and challenge, would be foolhardy for the astute manager and disastrous for the firm.

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[1] The February, 1981 issue of *Arizona Business* contained several articles on productivity.

[2] Some of these changes are discussed in the last part of this article which addresses trends in general management.

[3] "Schools Again Offer Courses on Production," *The Wall Street Journal*, January 26, 1981, p. 23, discusses the increased emphasis now being focused on P/OM by the business schools.

[4] "How We're Fixed for Strategic Minerals," *Fortune*, Vol. 103 (February 9, 1981), pp. 68-70 discusses the United States' tenuous position in supply of platinum, titanium, manganese, chromium, and cobalt.

Opinions of Arizonans Toward the Mining Industry

STEPHEN W. BROWN
CORBETT F. GAULDEN, JR.

Arizona's mining industry is a major contributor to the state's livelihood employing over 23,000 people and contributing $5.6 billion to personal, business, and government income.[1] These income figures represent actual dollars paid for services and supplies along with recirculated dollars.

Such a large industry exerts an impact beyond its immediate boundaries. The mining industry's size and scope are noticeable and generate varying forms of public reaction. Some people have voiced positive or negative concerns over various behaviors and practices of the industry; others are only casually familiar or unfamiliar with mining activities.

The concerns that do exist relate to areas such as land and water use and environmental pollution. These concerns do not necessarily indicate that Arizona citizens are up in arms about the mining industry; opinions vary from person to person and from region to region in the state. Nevertheless, public opinion does influence industry behavior explicitly and implicitly. Federal, state, and local government regulations, for example, are affected by these opinions. The regulations, in turn, contribute to the political, economic, and social environment in which the mines must operate and compete.

The objective of the study was to examine the opinions of Arizonans toward the mining industry, and to analyze observations among different categories of people. More specifically, opinions were examined for both the sample as a whole and for selected sample subsets.

METHODOLOGY

To fulfill the study's objective, a public opinion survey was conducted by means of a telephone questionnaire to a sample of 992 adult residents of Arizona. The sampling was allocated across the state on a proportionate basis. With this procedure, people from all geographic areas are represented in the study as follows: Metropolitan Phoenix, 549; Metropolitan Tucson, 241; nonmetropolitan areas, 202.[2]

A pretested questionnaire was used to collect data via telephone interviews. Experienced telephone interviewers, who administered the questionnaire,[3] participated in an extensive training session, and were supervised on a daily basis.

No pressure was used to encourage respondent participation, but over three-fourths of the people contacted chose to participate in the survey. Twelve percent of the completed interviews were validated to ensure

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Mining has a positive image in the minds of most Arizonans as a large industry that contributes to the state's economy. Nevertheless, a small portion of the state's residents continue to voice concerns about environmental effects and working conditions.

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data authenticity. The validation procedure was carried out by telephone callbacks to selected respondents by the interviewers' supervisor.[4]

The profile of almost one thousand respondents, shown in Table 1, conforms closely to the population characteristics of Arizona residents as a whole. The respondents represent a good cross-section of newcomers versus medium to long-time residents, age groups, family sizes, educational levels, income levels, geographic areas, and sexes.

TABLE 1

RESPONDENT PROFILE

	Percent of Total
Length of Arizona Residency	
Under 1 year	6.7
1 to 5 years	24.3
5 + to 10 years	16.4
10 + or more years	52.1
Years of Education Completed	
Less than high school	8.7
High school or trade school graduate	34.2
Some college or post high school	31.4
College graduate	24.9
Age Distribution	
Under 20	6.5
20-29	24.1
30-39	19.1
40-49	14.6
50-59	13.2
60 or over	21.5
Family Member Has Worked in Mining	
Yes	20.5
No	78.6
Family Member Has Lived in Mining Community	
Yes	22.0
No	76.8
Annual Household Income	
Less than $5,000	6.8
$5,000 - $9,999	10.8
$10,000 - $14,999	14.5
$15,000 - $19,999	14.3
$20,000 - $29,999	20.1
$30,000 - $44,999	12.4
$45,000 or more	6.2
Refused to answer	14.8
Place of Residence	
Metropolitan Phoenix	55.3
Metropolitan Tucson	24.2
Other (see text)	20.5
Sex	
Male	47.6
Female	52.2

Source: Survey conducted under direction of the authors.

On the surface, the percentages in Table 1 for working in mining and living in a mining community may seem high. It should be noted that the percentages do not mean that over 20 percent of the respondents had worked in a mine and/or lived in a mining community. The questions simply asked if any family member had these kinds of exposure to mining. The percentages do indicate, however, that approximately one out of five survey participant families had some direct contact with mining. This high level of exposure to the industry seems to indicate a population fairly sophisticated in its knowledge of the industry.

One final comment is noteworthy on Table 1. Over 85 percent of the respondents provided the interviewers with their family income. This is a high percentage and is one indication that the questionnaire itself helped establish rapport with the respondents and that the interviewers administered the survey in a professional manner. This type of rapport goes a long way toward ensuring reliable responses.

SURVEY RESULTS

In this section, the findings from the survey are presented. Overall responses are discussed along with how some of the findings varied by selected respondent characteristics.

Perceptions of Leading Industries

Table 2 illustrates what the public considers to be the largest industries in the state. The question associated with these data was asked in an unaided recall format. This means that the respondents were not read a list of industries; instead, they were simply asked, "In your opinion, what are the largest industries in

TABLE 2

PERCEIVED SIZE OF ARIZONA INDUSTRIES

What are the largest industries in Arizona?	Percent of Total*
Mining	62.5
Agriculture	31.1
Electronics	25.1
Tourism	22.6
Retailing	4.0
Banking (financial)	2.0
Other	31.1

*Adds to over 100 percent because of multiple responses to the question.

Source: Survey conducted under the direction of the authors.

Arizona?" Over twice as many participants perceive mining as a large industry as the next most often mentioned group. The fact that nearly two-thirds of the people mentioned mining without any coaching clearly shows that the industry's significance is well known. Next to mining, agriculture (31.0 percent), electronics (25.1 percent), and tourism (22.6 percent) were noted frequently. Close to a third of the participants volunteered a variety of industries (e.g., transportation, health care, manufacturing in general) that were lumped into the *Other* category because of their infrequent mention or lack of specificity.

Relating these findings to respondent characteristics shows that as length of residency, education, and income increase, mining is more likely to be recognized as a large economic force in the state. As would be expected, having a family member who has worked in mining leads to a greater awareness of the industry's significance. The results of the study also show that people from Greater Tucson and the nonmetropolitan areas of the state view mining as having a greater impact than do residents of metropolitan Phoenix.

Perhaps more important than how large an industry is viewed is its public image. Table 3 shows the degree of favorableness associated with each of the state's major industries. With the exception of the utilities, all the groups are highly regarded. Agriculture has the most favorable image followed closely by electronics and mining. Parenthetically, if the "very" and "somewhat favorable" ratings are combined, electronics would actually become the most favorably viewed industry. It should also be noted that electronics generated the fewest negatives.

Mining's positive image is especially significant since the industry is viewed as being large by such a sizable segment of the sample. "Largeness" sometimes connotes negatives in the minds of some individuals, but this is evidently not the case with Arizona's mines. Overall, the industry's image does not deviate much between respondent groupings. Obviously, industries which have engendered strong favorable public images should do everything possible to maintain, or even enhance, those images. The mining industry in Arizona does, in fact, engage in just such public relations.

TABLE 3

PUBLIC IMAGE OF ARIZONA'S MAJOR INDUSTRIES

How favorable or unfavorable are your opinions of the following Arizona industries?	*Very Favorable*	*Somewhat Favorable*	*Unfavorable*
Banking	51.1	33.6	15.4
Electronics	69.9	26.3	3.8
Manufacturing	57.7	32.0	10.3
Mining	69.7	22.7	7.7
Agriculture	74.0	19.0	7.0
Utilities	24.4	24.6	50.9

Source: Survey conducted under the direction of the authors.

General Thoughts on Mining

Before proceeding into more specific mining questions, the respondents were asked what positive and negative thoughts, if any, they had about mining. Both of these questions were asked in an open-ended (e.g., unaided recall) manner.

Many positive thoughts toward the industry were elicited (see Table 4). The conditions associated with

TABLE 4

GENERAL THOUGHTS ON MINING

	Percent of Total[*]
Positive Thoughts About Mining	
Pay good wages/salaries; good working conditions	40.0
Provide employment/jobs	33.2
Contribute to state's economy; pay taxes	29.4
Mine for important minerals/resources	12.0
Community service/contribution	5.4
Maintain ecology/environment	3.7
Other	7.5
Negative Thoughts About Mining	
Pollution of air or water	22.2
Damaging/destroying land	18.4
Working conditions (safety, strikes, etc.)	9.9
Other	7.3
Minerals Noted as Being Mined in Arizona[**]	
Copper	89.4
Silver	35.9
Gold	31.5
Coal	14.3
Uranium	10.4
Turquoise	7.0
Oil	1.3
Other	20.8
Don't Know	7.5

[*] Multiple reasons were possible for all three data sets in this table. For this reason, the first and third set sum to over 100 percent.

[**] All of the minerals listed are mined in the state, with copper accounting for the vast majority of mining production.

Source: Survey conducted under the direction of the authors.

working in mining (especially the comment "good wages") were mentioned by 40 percent of the sample. The actual provision of jobs was noted by one out of three respondents. Close to one-third of the respondents indicated the contribution the mines make to the state, including the tax support. The only other frequent observation was the industry's search for important minerals and resources. Only 12 percent of the sample failed to volunteer one or more positive comments.

As can be discerned from Table 4, far fewer negative than positive comments surfaced. Over one out of five respondents were critical of the pollution of air or water. Damaging and destroying the land was mentioned by 18.4 percent of the participants, and 10 percent of the sample found fault with working conditions associated with mining employment. Nearly one-third of the people could offer no negative comments. Implications are that the industry is very favorably viewed as a potential or real employer. The environmental and working condition concerns indicate potential areas of action.

The last part of Table 4 shows how familiar Arizonans are with the minerals being mined in the state. Nearly all of the public is aware that copper is mined. The awareness of other minerals is much less with a third mentioning silver and gold, and 14.3 percent indicating coal.

Attitudes Toward Mining

Table 5 shows the survey participants' attitudes toward various factors associated with the mining industry. This attitudinal data is valuable in assessing public sentiment toward the industry. The respondents were read the statements on the left hand side of the table and then were asked if they agreed or disagreed with each statement.

The responses to the first statement clearly demonstrate that Arizonans think of mining as being good for the state's economy. The next statement indicates that a slight majority feel the mines are doing a good job of controlling pollution. Nevertheless, one out of four respondents disagreed with this statement, further indication that this should be an area of action and public relations.

People with education beyond high school were less likely to feel that the mines have done a good job of controlling pollution, and a third of the college graduates disagreed with the statement. Concurrence with the statement also varied directly with a person's age — the older the respondent, the more likely they are to feel that the mines have done a good job. Families with work experience in mining are more likely to think that the industry is doing well in combating pollution, as are people living outside the state's two population centers. Nearly a third of the people in Tucson do *not* feel the mines are doing a good job in controlling pollution.

TABLE 5

ATTITUDES TOWARD MINING

Statement	*Agree*	*Neither Agree Nor Disagree*	*Disagree*	*Don't Know*
A. The mining industry is good for Arizona's economy. . . .	97.6	0.6	0.8	1.0
B. Overall, the mining industry has done a good job of controlling pollution.	54.1	10.7	26.1	9.1
C. The mining companies do a good job of supporting their communities.	76.6	4.2	6.3	12.8
D. Mining companies should be encouraged to explore and mine government controlled land for minerals. . .	69.9	7.8	16.4	5.5
E. Overall, the mining companies are a good place to work.	50.3	7.1	13.0	29.5
F. The mining industry should be heavily regulated by government.	20.5	7.7	67.2	4.6
G. Mining companies should pay higher taxes than other companies in Arizona.	7.6	3.4	83.4	5.7

Source: Survey conducted under the direction of the authors.

The public's awareness of the mines' support of their communities is seen in Statement "C" in Table 5. As it becomes more difficult to find valuable minerals on private land, some talk of exploring and mining public land has occurred. The public's support of using public land for this purpose is evident in Statement "D". The higher the educational level, the less likely the support for mining on public land. Age does not seem to influence the "agree" responses to the statement. Nevertheless, younger people are more inclined to oppose activity on government property. In terms of geographic areas, the strongest support for the proposal comes from Phoenix and the nonmetropolitan communities. One out of four Tucson respondents oppose the idea.

Statement "E" in the table indicates that close to a third of the sample respondents are unfamiliar with the work environment at the mines. Of those familiar, however, most feel that mining companies are a good place to work. Among people in the state for less than ten years, however, only 40 percent feel the mines are a good place to work. Agreement with the statement is highest among people with no post-high school education and over 40 years of age. Close to one-third of the people under 20 disagree with the statement. As one would expect, families with mining work experience are especially supportive of the companies as a place to work. A majority of Tucson and nonmetropolitan participants agree with the statement, while 42.5 percent of the Phoenicians concur.

The last two items in the table pertain to mining and government. The state's conservatism is reflected in the results to Statement "F". Most survey participants do not feel the mines should be heavily regulated. Furthermore, the last statement indicates that respondents believe mining companies should pay the same taxes as other companies.

Knowledge of Mining

The results presented in Table 6 indicate that Arizonans are reasonably familiar with the industry. Nevertheless, only a small percentage of the people know how much of a return the average mining company makes on a dollar after taxes. As would be expected, over one-third of the participants responded "don't know," when asked this question.

The second set of data in the table demonstrates a positive public feeling toward mining company profits. A majority stated that profits are reasonable and just over 10 percent felt that they were insufficient.

Water is a valuable commodity in Arizona and its use and abuse often raises criticism. In the past, the Mining Association has advertised that the industry uses less than 3 percent of the state's water. The third set in Table 6 shows that 35.2 percent of the respondents were correct in judging mine water usage, while another 26.3 percent indicated a usage of 5 percent of the state's water.

The three true-false statements at the end of the table demonstrate knowledge about important industry characteristics. A majority of Arizonans apparently are familiar with the relative productivity of the state's copper mines, the small amount of land used for mining, and the government's control over a majority of the state's land.

TABLE 6

KNOWLEDGE ABOUT MINING

	Percent of Total
How many cents out of each dollar of sales do you think the average mining company makes after taxes?	
0-5 cents	17.7
6-10 cents	11.7
11-15 cents	7.1
16-25 cents	8.3
26-35 cents	6.0
36-45 cents	3.2
46-55 cents	4.5
Over 55 cents	4.5
Don't know	36.9
Do you think mining companies as a whole make too much profit, a reasonable profit, or not enough profit?	
Too much profit	7.7
Reasonable profit	63.1
Not enough profit	11.3
Don't know	17.9
Of all the water used in the state for all purposes, would you guess that the mines use 3 percent, 5 percent, 10 percent, 20 percent or more than 25 percent?[*]	
3 percent	35.2
5 percent	26.3
10 percent	15.6
20 percent	6.7
More than 25 percent	5.2
Don't know	11.0

True-False Statements[**]	*True*	*False*	*Don't Know*
A. Arizona produces more copper than all the other states combined	72.2	16.3	11.5
B. All mining activities in Arizona are conducted on about one-fourth of 1 percent of the land in the state.	63.4	14.9	21.7
C. Over 70 percent of the land in Arizona is owned by the government	75.8	12.5	11.5

[*] Arizona's mines use approximately 2.7 percent of all the water used in the state.

[**] The correct answer to all three of the true-false statements is "true."

Source: Survey conducted under the direction of the authors.

Environmental Tradeoffs

As it becomes increasingly difficult to mine for copper and other necessary minerals, the relaxing of various traditional standards have been discussed. Table 7 explores the respondents' reactions to scenarios involving mining on public land and relaxing pollution standards.

Most people would favor the mining for minerals on public land if nearly all essential minerals had been extracted from private land in the state. Length of residency, education, sex, and exposure to mining appear

TABLE 7

OPINIONS ON ENVIRONMENTAL TRADEOFFS

Scenario	*Strongly Favor*	*Somewhat Favor*	*Not Favor*	*Don't Know*
A. Assume that nearly all the essential minerals have been mined from the private land in Arizona. Would you favor the mining for minerals on public (government) land?	50.1	23.6	15.4	6.0
Would you favor the mining for minerals in wilderness areas?	21.8	28.6	50.1	4.2
B. Assume that a relaxing of air and water pollution standards would be helpful in stimulating economic growth. Would you favor such a relaxation of pollution standards?	18.5	17.4	60.3	3.8

Source: Survey conducted under the direction of the authors.

to have little impact on opinions. On the other hand, greater support is shown for the idea as age increases, with the strongest opposition coming from those under 30 years old. Rising family incomes can be readily associated with more support for the proposal. It is interesting to see the degree of support vary among the state's two major cities. While close to 60 percent of the Phoenix residents "strongly favor" mining on public land, only one-third of the people from Tucson responded in a like manner. It should be added, however, that 41.4 percent of the Tucson participants "somewhat favored" the idea. It should also be noted that support for mining on public land drops substantially if the land is in wilderness areas. As shown in the table, half the survey participants are opposed to mining in such areas.

The last scenario in Table 7 reveals a strong preference for the maintenance of air and water standards even if it results in difficulties in stimulating economic growth. Newcomers are the only group where less than half are opposed to this idea. As a matter of fact, one out of four new residents actually support relaxing pollution standards. Different opinions are also seen among educational levels and age groups. Opposition to the idea mounts as education increases, and relatively more resistance is also seen among those under thirty years of age. Opposition drops below 50 percent for the two oldest age classes. On a geographic basis, strongest disagreement toward the proposal comes from Tucson. These findings seem to indicate a stronger public relations effort should be directed toward younger adults and Tucson residents. These efforts accompanied with evidence of real environmental concern on the part of the industry could go a long way toward enhancing the industry's future goodwill.

Mining Company Awareness

In this last section, the public's awareness of advertising and mining companies is explored. Looking first at advertising, most respondents are aware of some promotion pertaining to the mining industry in Arizona (see Table 8). However, when asked to recall, without any assistance, the slogans used in the advertisements, just over half could recall none. Of the slogans that were remembered, none were recalled by more than 7 percent of the sample.

TABLE 8

AWARENESS OF ADVERTISING AND MINING COMPANIES

	Percent of Total
In the past year or so, do you recall having seen, heard, or read any advertisements about the mining industry in Arizona?	
Yes	78.8
No	20.2
Don't know	1.0
Can you recall the slogan(s) used in these ads?	
Can't recall any slogans	53.1
"Arizona's Mines, we live here too"	6.9
"Phelps Dodge, it means a lot more than just copper"	3.8
Other	29.2
Can you recall the names of any mining companies in Arizona:	
Phelps Dodge Corporation	29.1
Magma Copper Company	20.0
J. Kennecott Copper Corporation	17.9
The Anaconda Company	11.7
Duval Corporation	10.7
Inspiration Consolidated Copper Company	7.4
ASARCO, Inc.	7.3
Anamax Mining Company	7.1
Cypress Mines Corporation	2.2
Hecla Mining Company	2.1
Amax Arizona, Inc.	2.0
Lakeshore Mines (or Noranda)	0.1
Ranchers Exploration & Development Corporation	0.1
Other	18.4
Don't know	37.2

Source: Survey conducted under the direction of the authors.

Respondents were asked if they could name any mining companies in the state. Nearly 40 percent could not remember any firms. Of the companies recalled, Phelps Dodge was the most well-known (29.1 percent), followed by Magma Copper (20.0 percent), Kennecott Copper (17.9 percent), The Anaconda Company (11.7 percent), and Duval Corporation (10.7 percent). It should be noted that this was an unaided recall question, meaning that the respondents were not provided with any company names.

Overall, Arizonans have an essentially positive image of the mining industry. Mining is recognized as a large industry, and one that contributes to the state's economy. The citizenry is quite knowledgeable about various aspects of the industry. Despite the public's overall favorableness toward mining, the companies should be aware of certain areas of concern that do exist. These concerns, however, are more than balanced by a pro-business and pro-mining orientation on the part of state residents.

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[1] *Arizona: Copper Capital, U.S.A. 1978* (Phoenix: The Arizona Mining Association, October 1979), p. 10.

[2] Sampling from the nonmetropolitan areas included the following communities: Bisbee-Douglas 20, Casa Grande-Coolidge 17, Clifton-Morenci 8, Flagstaff 29, Globe-Miami 11, Lake Havasu City-Kingman 16, Nogales 10, Prescott 16, Safford-Duncan 8, Sierra Vista 21, Winslow-Holbrook 12, and Yuma 34. For purposes of analysis, results from these communities are classified as nonmetropolitan.

[3] Arizona State University graduate students conducted all of the interviews except for those administered in the southern part of the state (including Tucson). A professional field interviewing firm conducted these interviews.

[4] All interviews were completed in May and early June 1980, before the mining strike.

Latin American Subsidiaries and Social Responsibility

JOHN D. WHITT

Most countries are taking a close look at the manner in which corporations assume their responsibilities to society. Until a few years ago, it was considered that such responsibilities consisted primarily of abiding by the law, employing labor, purchasing raw materials, and providing a usable service or product. More recently, however, some writers have asserted that the modern corporation is considered to be social in nature and that its responsibilities extend to all segments of society.[1]

Corporations in most capitalistic industrialized nations are increasing their involvement in social responsibility activities and are periodically reporting on the socially oriented activities in which they are engaged. It is likely that multinational subsidiaries located in developing countries have more reasons than do their domestic counterparts for involvement in social responsibility performance, because of the suspicion with which they are viewed by the host publics and governments.[2] Foreign subsidiaries may find that by creating an atmosphere of goodwill through involvement in social development, they create a more amiable setting when dealing with the host governments on the sensitive matters of regulation of foreign businesses.

Before proceeding further with social responsibility, it is helpful to establish a definition. Professor Raymond Bauer of the Harvard School of Business stated, "Corporate social responsibility is seriously considering the impact of the company's actions on society and operating in a way that balances short-term business needs with society's long-term needs, thus ensuring the company's survival in a healthy environment."[3]

Another definition of social responsibility was made by Stanley G. Karson, Director of Social Responsibility of the Institute of Life Insurance: "It is the commitment of the corporation, conscious of its interdependence with the community, to use its available resources in such a manner that they will impact positively on society."[4] Some authors and business people hold a very broad view of social responsibility that includes all activities involved in employment of human and material resources for the purpose of earning a profit.

Caterpillar Tractor Company classifies its social responsibility activities into three categories, as given by Lee L. Morgan, chairman and chief executive officer of that firm.[5] The three areas can generally be classified as normal economic functions, fair business practices, and community involvement:

> At Caterpillar, we define three categories of corporate citizenship. The first involves pursuit of daily business affairs — the "basics" of private enterprise — such as developing desired goods and services, providing jobs and training, in-

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In order to obtain information on the current state of social responsibility involvement of foreign affiliates in Latin America, a survey was conducted among respondents with business experience in that area. This article reports the results of that survey.

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> vesting in facilities, dealing with suppliers, paying taxes, attracting and holding customers, advancing technology, earning a profit.
>
> The second category involves the way these daily business affairs are implemented. This category emphasizes conduct of business in a way that is socially responsible. It isn't enough to design, manufacture, and sell useful products. Business should, for example, employ people without discrimination, see to their job safety (and safety of its products), help protect environmental quality, and conserve energy and other valuable resources.
>
> The third category relates to initiative beyond our operations — such as helping solve community problems. To the extent our resources permit — and if a host community wishes — we participate selectively in projects to improve community life.

Many developing host countries are beginning to demand yet another type of social responsibility from foreign companies operating within their borders — disclosure of activities and policies that can have a material effect on the balance of payments, currency valuation, and general economic stability of the country. The United Nations Transnational Center, the Organization for Economic Cooperation and Development (OECD), and others[6] have proposed that multinational corporations disclose to the public information on the following: structures of the enterprise, showing location of affiliates with percentage of ownership; operating results by geographical area and product line; movement of working capital funds and foreign loan payments; significant new capital investment by area, with sources of funds; policies on intragroup pricing; new jobs created by geographical areas, with costs; details of employee training; and taxes paid to governments; and dividends, interests, and royalties to owners.

DEGREE OF INVOLVEMENT

Many business people feel that a firm is fulfilling its social responsibility if it carries out normal economic functions (first category) in a legal and prudent manner. Enrique Uhthoff, an executive at Banco Internacional and a respected figure in the Mexico City financial community, said, "I don't think a firm should be overly concerned with its image or relationship evolving from community service involvement. The high taxes it collects obligates the government to provide for all of the needs of a community." Uhthoff feels that companies that spend their funds to donate park benches are doing little more than taking money out of their stockholders' dividend checks.[7] Ruiz Galindo, Jr. prominent businessman, believes that social responsibility of business is to be "successful, efficient, and profitable, to assure permanence and growth as well as the efficient production of goods and services."[8]

Yet the research discussed later in this article showed that most business people believe that multinational affiliates in developing countries should get involved in socially responsible activities beyond the normal economic functions. Lloyd L. Halstead, President and General Manager of Ford Motor Company of Mexico stated:

> It is undeniable . . . that negotiations with government have a better chance of success when a company is known not only to be concerned with the host country's social problems and needs, but to have taken positive action to contribute solutions to social and community problems.[9]

In viewing the guidelines published by the United Nations, the OECD, individual business firms, and public accounting firms, one can gain much advice concerning recommendations with respect to social responsibility of business firms; yet it is apparent that these guidelines were designed primarily for domestic operations within industrially developed countries.

It is possible that some of the activities proposed in the guidelines for business firms in general, if practiced by foreign subsidiaries in some developing countries, could damage relations with the host country governments, or could result in wasted efforts.

The American Chambers of Commerce in individual Latin American nations have been working on suggested social responsibility guidelines and policies to fit their particular host countries and regions.

SURVEY OF SOCIAL RESPONSIBILITY

In order to obtain information on the current state of social responsibility involvement of foreign affiliates in Latin America, a mail and personal interview survey was conducted among respondents with business experience in that area. The following categories were covered: Conservation of Energy and Environment; Fair Treatment of Minorities and Other Disadvantaged; Employee Welfare and Training; Community Involvement; and Disclosure of Strategies, Policies, and Activities which Significantly Affect National Economic Stability.

Research Methodology

This study concerning Latin America used two separate surveys. One was a mail survey sent to thirty-two organizations consisting of the following:

•Group I: Eight headquarters of multinational firms with affiliates in Latin America. They were requested to answer for all of their Latin American affiliates taken as a whole.

•Group II: Thirteen Latin American affiliates of multinational firms, selected at random from lists of affiliates furnished by three U.S. multinational firms.

•Group III: Seven American Chambers of Commerce in Latin America, whose addresses were available. These Chambers of Commerce were requested to answer for all their U.S. multinational affiliate members taken as a whole.

•Group IV: Eight Latin American offices of an international public accounting firm, which represents all of that firm's offices in the region. They were requested to answer for all of their U.S. multinational affiliate clients taken as a whole.

The percentages of responses given in Table 1 refer to this mail survey. It will be noted that group II represents direct responses. Groups I, III and IV represent indirect responses, yet each response represents a number of affiliates.

TABLE 1

SURVEY RESPONDENTS

	Number of Questionnaires Answered			
Topics	*Group I*	*Group II*	*Group III*	*Group IV*
Environment and Energy	5	10	6	6
Treatment of Minorities	5	4	5	6
Employee Welfare & Training	5	10	6	6
Community Involvement	5	10	6	6
Disclosure of Strategies, etc.	5	3	5	6

Source: Survey by the author.

The other survey consisted of personal interviews with (a) Three headquarters of United States multinational firms, (b) The American Chamber of Commerce at Mexico City, (c) Mexico City and Guadalajara offices of four international public accounting firms, (d) eleven multinational affiliates in Mexico City, two of which are Latin American regional headquarters. Because this personal interview survey was quite subjective, it was used only to serve as a check on the reliability of responses of the mail survey, and to obtain information for additional observations.

Responses

Environment and Energy. Affiliates generally make only slight mention in their annual published reports about their activities in the areas of preservation of the environment and conservation of energy. Respondents indicated that generally the affiliates take no significant action in these areas except that required by law. The environmental problems do not seem to be as serious as they are in industrially developed nations. The energy problem is handled by market prices in most host countries.

Fair Treatment of Minorities and Other Disadvantaged. Some affiliates maintain policies with respect to fair treatment of minorities, yet respondents indicated that most governments do not favor public discussion of the matter. Respondents (40 percent of Group I, 50 percent of Group II, 30 percent of Group III, and 50 percent of Group IV) indicated that foreign affiliates do not make public disclosure of action they may take, if any, in any area of human rights. Governments are not inclined to admit the existence of violation of human rights within their countries.

Employee Welfare and Training. While United States domestic firms doubtlessly spend much more money per employee on employee welfare and training than do foreign affiliates, they probably do so primarily because of requirements of law and labor contracts. Foreign affiliates in Latin American countries seem to take greater initiative in this area than do their domestic counterparts, as indicated by 80 percent of Group I respondents, 80 percent of Group II, 80 percent of Group III, and 50 percent of Group IV.

Eastman Kodak sent thirty-one Mexican employees, along with their families, to the United States for specialized training before opening a new film manufacturing plant in Guadalajara, Mexico.[10]

Approximately 5 percent of Motorola's employees in Latin America receive company classes in electronics, human relations, and languages. Employees continue their university level studies through Motorola scholarships.[11]

Chrysler of Mexico uses nearly 100 instructors to give courses of three days to six months or longer to nearly 2,000 Chrysler workers. The thirteen-year-old program teaches management and classes in thirty-five other areas. A 300-student primary school is planned for children of employees at the Toluca Chrysler plant. It is designed to achieve family integration; employees can take their children to school when they go to work and pick them up after their shift is over. The school program will upgrade the educational level of future employees of Chrysler, since many children of employees in this area are expected to work for Chrysler when they grow up.[12]

Community Involvement. All respondents indicated involvement by all affiliates in community welfare, but largely in a passive manner such as making contributions to organized charitable, health, and educational institutions. A few affiliates (about 5 percent) conduct their own community projects. For example rabies was nearly eradicated in Argentina in a program by Avon Products.[13] Colgate-Palmolive attracts up to 800,000 participants each year in the Colgate Olympics of Brazil.[14] A new kindergarten for 500 preschoolers in Chile was financed by the local Dow affiliate. Ford Motor Company of Mexico aims its civic affairs efforts at the marginally productive sector of the population. Ford's program includes schoolhouse construction, agricultural training, and disaster assistance. Its programs are carried out in cooperation with the host country government in many cases.[15]

Disclosure of Strategies, Policies and Activities which Significantly Affect National Economic Stability. Responses indicated that over 50 percent of affiliates are publicly disclosing their codes of ethics, details of employee training activities, exports, and import substitution. However, respondents indicated that no affiliate nor multinational headquarters reports fully and voluntarily on items such as capital movements, transfer pricing policies, and operating results by segments. Host countries need such information to be able to anticipate tax revenues and balance of payments and currency problems, but it is doubtful that U. S. multinational firms will ever willingly publicly divulge sensitive information of this nature for it may give an advantage to their competitors. Yet, responses from 20 percent of Group I respondents, 20 percent of Group II, 33 percent of Group III and 16 percent of Group IV indicate that affiliates do report privately and voluntarily to host governments on major funds movements and other activities of strategic importance to the host country economy.

Extent of Involvement. It seems that affiliates of the large multinational firms are inclined to be active in social involvement. Furthermore, the affiliates which are majority-owned by foreigners are more active than the minority-owned ones. The latter firms generally possess a local identity and thus do not feel the pressure to create an image as do the majority-owned affiliates, which may conduct popular types of social responsibility activities to counteract arguments that multinationals have only one objective — profit.

No means exist in Latin America, nor in any part of the world, for evaluating the extent of involvement in social responsibility of companies on a comparative basis. From personal interviews with respondents in this project, it was determined that foreign affiliates generally do not wish any sort of "report cards" to be attached to them by either host governments or publics, for fear that a "social responsibility war" would break out among competitors. Furthermore, no evidence could be found of measurement of effort put out in social responsibility in excess of that required by law and custom.

AREAS OF OPPORTUNITY

When a company decides that it will become involved in the realm of social responsibility, it faces the decision as to what type of activities it will carry out. An overriding question is whether to carry out projects that are related to or consistent with its business mission. Champion International of Brazil (paper and cellulose) has sponsored a program of seedling planting by farmers.[16] Certain vegetable processors (Nestle) conduct agricultural training schools.[17] Yet other firms feel that social responsibility projects should be divorced from their immediate profit-making operations.

Another question to be decided is whether the firm is looking for short-term or long-term results. A program that benefits a firm's employees or the community that is its market may bring in more rapid results than a tick eradication project in ranch country carried out by a cosmetic company, for instance. Yet the latter activity may bear the appearance of a higher degree of credibility.

Evidence showed that some affiliates had embarked upon projects that backfired on them, particularly in the area of community service projects. It is difficult to determine just which types of projects will receive favorable reaction in a particular community or society; much depends upon the philosophy of the people in the community. A particular welfare project may be well received in one community, yet in another community it may be viewed as an underhanded means to buy public favor. Furthermore, host governments should be studied to determine which activities are more acceptable to them.

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[7] Jim Budd, "Social Responsibility and the Bottom Line," *Mexican-American Review*, March 1978, p. 43.

[8] *Ibid.*

[9] L. L. Halstead, Speech at 1978 Spring Conference, University of Louisville, Ky., April 24, 1978.

[10] "Corporate Citizenship," *International Management and Development Institute,* (Washington, D.C., 1979), p. 43.

[11] Joe Harmes, "Who's Doing What?" *Mexican-American Review,* March 1978, p. 21.

[12] *Ibid,* p. 23.

[13] "Corporate Citizenship," *International Management and Development Institute*, (Washington, D.C., 1979), p. 2.

[14] *Ibid.*

[15] Joe Harmes, "Who's Doing What?" *Mexican-American Review,* March 1978, p. 17.

[16] "Examples of Corporate Community Involvement Abroad," *International Management and Development Institute*, (Washington, D.C., 1975), p. 30.

[17] "Corporate Citizenship," *International Management and Development Institute,* (1979), p. 3.

The Arizona Business Scene

1912

Consumer Prices in Arizona: Housing Costs

Housing costs have received considerable publicity in recent years as both home purchase prices and mortgage interest costs have rapidly escalated. This article examines the history of inflation in these housing expenditures, comparing the Arizona experience to that of the United States as a whole. Since a common measure of housing costs is the housing portion of the Consumer Price Index, the controversy concerning whether housing costs should be included in the CPI is also examined in the latter part of this article.

The increase in housing costs in the Phoenix area in the past three years has been quite rapid — greater than that of the overall Metropolitan Phoenix CPI and also greater than the national average for housing costs. Since the origination of the Metropolitan Phoenix CPI in 1969, however, housing costs in Phoenix have increased at approximately the same rate as the overall Phoenix CPI, a rate somewhat less than the average for housing costs across the nation. Thus, Phoenix's rapid inflation in housing costs since 1978 have just offset the relatively slow inflation rate of housing from 1969 to 1977.

A comparison of the Phoenix and national rates of inflation is shown in Table 1. (All CPI items other than housing items will be discussed in a future "Arizona Business Scene.") Housing costs in the CPI are divided into three major groups: shelter (by far the largest group); fuel and other utilities; and household furnishings and operation. Each group is further sub-

TABLE 1

PHOENIX AND NATIONAL RATES OF INFLATION IN HOUSING IN PERCENT, MEASURED FROM DECEMBER TO DECEMBER

	1980		*1969-1980*	
	Phoenix	*U.S.*	*Phoenix*	*U.S.*
ALL ITEMS	13.3	12.4	134.0	128.9
HOUSING	14.4	13.7	136.9	142.5
Shelter	17.5	15.1	151.0	154.3
Residential Rent	4.8	9.1	78.3	85.5
Homeownership	20.5	16.5	164.8	176.4
Home Purchase	10.4	11.4	NA	NA
Property Insurance	.1	13.2	NA	90.7
Property Tax	(8.2)	4.6	NA	70.0
Mortgage Interest Cost	40.6	27.6	NA	NA
Maintenance and Repair	13.9	10.6	NA	148.8
Fuel and Other Utilities	5.9	13.6	136.8	175.6
Fuel oil, coal, bottled gas	20.5	19.9	NA	448.0
Gas (piped) and electricity	5.3	15.9	NA	199.5
Telephone	(.3)	4.5	NA	38.1
Water and Sewerage maintenance	10.9	8.3	NA	134.5
Household Furnishings and Operations	6.6	8.1	91.7	90.8

NA = not available

Source: Bureau of Business and Economic Research, College of Business, Arizona State University. Bureau of Labor Statistics, Department of Labor from various issues of the *CPI Detailed Report.*

divided into more detailed subgroups, such as homeownership, which in turn are subdivided into still more detailed categories, such as home purchase.

Shelter costs consist of both rental costs and homeownership costs. Residential rent has increased less than the overall rate of inflation in most years since 1969, both in Phoenix and across the nation. The inability of landlords to increase rents sufficiently to cover their own cost increases (due to the competitive nature of the consumer's choice between renting and home purchasing) has contributed to a decrease in the rate of construction of new multifamily construction.

In contrast, homeownership costs have inflated at a relatively rapid rate, both in 1980 and in the entire 1969-1980 period. Two items are primarily responsible for this rise in costs: home purchase prices and mortgage interest costs. After a number of years of moderate growth of home purchase prices in Phoenix, the increase in prices was 26.2 percent in 1978 and 25.9 percent in 1979. Combined with a more moderate increase of 10.4 percent in 1980, house prices have increased 75 percent in Phoenix in the last three years. Despite a national increase of only 43.5 percent during this time, Phoenix house price inflation still compares favorably to the national average since 1969. This surge in home purchase prices is small in comparison to the increase in mortgage interest costs, however. In the last three years this interest expense soared 188 percent in Phoenix and 115 percent nationwide.

Other homeownership costs have not been a part of the rapid inflation of recent years. In Phoenix, both property insurance and property taxes have decreased over the last two years, by -.3 percent and -9.9 percent, respectively. These decreases compare to national increases of 26.7 percent for property insurance and 8.5 percent for property taxes.

Fuel and other utility costs represent the next largest group of housing costs. These costs have also increased at a slower rate in Phoenix than in the United States as a whole since 1969. After several years of relatively large price rises in the early and middle 1970s, the yearly increases in fuel and other utilities in Phoenix have been only 2.5, 4.4, and 5.9 percent in the last three years. While the cost of electricity and piped gas has increased more rapidly than this in recent years (30.7 percent in the last two years), the largest contributor to inflation in this housing group has been the cost of fuel oil, coal, and bottled gas; this subgroup's average 1980 price across the nation is four and one-half times the 1969 price. In contrast, the cost of telephone service in 1980 is only about one and one-third times the 1969 price.

The third housing cost group is household furnishings and operation. Increases in this category have been moderate, both in recent years and over the entire period since 1969, and have been comparable in Phoenix and the rest of the nation.

Thus, most housing costs in Phoenix have increased at less than or equal to the overall rate of inflation, both in 1980 and since 1969. These price increases have generally been less than the increases in the nation as a whole. The only exceptions have been mortgage interest cost increases from 1978 to 1980 and home purchase price rises in 1978 and 1979. These items increased at far above the overall inflation rate, and also above the average rate for the nation for these items, in these years.

There has been considerable comment across the country in recent years that housing costs should not be included in the CPI, that the rapid increases in these costs are causing the CPI to overstate inflation. There are two primary justifications for this argument: first, homeownership is an investment, not simply an expense; and second, people do not constantly buy houses, thus are not subject to the current inflation. A close examination of these arguments indicates that they are concerned with only two housing costs: home purchase price and mortgage interest cost. Consumers are still subject to increases in all the other housing costs, though all of these other items combined are weighted much less heavily in the CPI than the purchase price and mortgage costs. Further, while most consumers are not affected continuously by these cost increases, the cumulative effect of many months or years of price increases may affect these consumers whenever they do buy a house. Thus, a distinction can and should be made between a long-term and short-term rate of inflation.

The inflation in home purchase prices and mortgage interest costs that is actually felt by a consumer varies greatly depending upon the individual situation of the consumer. There are essentially four situations: (1) *the potential homebuyer*, a consumer who does not now own a home but plans to buy one in the future; (2) *the transient homeowner*, a consumer who currently owns a home and later plans to sell this house and buy another; (3) *the permanent homeowner*, a homeowner who never plans to buy another home; (4) *the permanent renter*, a renter who never plans to buy a home.

In the first situation (the potential homebuyer), until the renter buys a house, the most accurate measure of this consumer's inflation would be to omit homeownership expenses. However, since this renter plans to buy a house, he will at some time feel the effects of housing inflation; his most accurate long-term inflation measure includes homeownership but excludes rent, since he will not be renting indefinitely. Approximately 15 to 20 percent of Metropolitan Phoenix residents are potential homebuyers.

In the second situation, the consumer is probably not affected by inflation in home purchase prices nor rental increases, but the increase in mortgage interest costs will have an impact. Disregarding income taxes, the current homeowner, on the average, probably has a zero inflation rate in home purchase prices: The current mortgage payment does not increase in the short term and in the long term the increased cost of a newly purchased home will likely be offset by the capital gain realized upon the sale of the current home. The current homeowner is also not affected in the short term by increases in mortgage interest costs, since most consumers have fixed rate mortgages.

However, in the long term the inflation in mortgage interest costs will affect the current homeowner. For example, assume that a person has lived in the same home since 1967, which was financed for $45,000 at 6 percent interest. The principal and interest payment has not changed for fourteen years. The person must now move, however, and buy a new home at 14 percent interest. Assuming that all of the equity built up in the old home is used as a down payment for the new home and assuming that the amount of money borrowed on the new home is the same $45,000, the monthly principal and interest payment will approximately double from $270 to $533 due entirely to the inflation in interest costs. Approximately 35 to 40 percent of Phoenix residents are transient homeowners.

The consumers in the third situation are not affected by inflation in home purchase price and mortgage interest costs, nor in rental expense. These consumers are affected by price changes in other homeownership expenses, such as property taxes. Ironically, most retirees are among this group of consumers, which constitutes about 40 percent of the Phoenix area population, yet social security benefits are increased at the full rate of inflation, including the inflation in home purchase and mortgage interest costs.

For the permanent renter, the increase in rent should be included in the CPI, but all homeownership costs should be omitted. To exclude the inflation in homeownership costs from the CPI, as proposed and practiced by many, is valid only for this small segment of the population, about 5 percent of the Metropolitan Phoenix population.

Thus, the consumers in each situation have differing inflation rates, as illustrated in Table 2. The most accurate measure of inflation for potential homebuyers is the All Items CPI except rent, which measures an inflation rate quite close to the CPI All Items. Consumers in the second situation (transient homeowners) are subject to only a slightly lower inflation rate — that of All Items less home purchase and rent. Like potential homeowners, the full inflation may not be felt mon-

TABLE 2

EFFECTIVE INFLATION RATE FOR VARIOUS CONSUMER SITUATIONS

	CPI All Items	*CPI Less Rent*	*CPI Less Home Purchase and Rent*	*CPI Less Home Purchase, Mortgage Interest and Rent*	*CPI Less Homeownership*
Metropolitan Phoenix					
1977	8.6	8.6	9.0	8.5	8.8
1979	11.5	11.8	9.7	5.6	7.0
1979	15.8	15.9	14.5	10.6	10.8
1980	13.3	13.9	14.4	11.0	10.7
United States Average					
1978	9.0	9.1	8.8	7.3	7.8
1799	13.3	13.6	13.3	10.5	11.0
1980	12.4	12.6	12.7	11.0	11.0

Source: Computed from the Metropolitan Phoenix Consumer Price Index, Bureau of Business and Economic Research, College of Business Administration, Arizona State University; and the National Consumer Price Index, Bureau of Labor Statistics.

thly, but will affect these consumers when they buy another home. The permanent renters and permanent homeowners in the third and fourth situations are subject to considerably slower inflation rates, each excluding both home purchase and mortgage interest costs.

As can be seen from Table 2, the rapid increases in home purchase prices and mortgage interest costs did not occur until 1978. Since that time, the increases in these costs have been more rapid in Phoenix than the national average, to the extent that the inflation rate felt by both the third and fourth groups of consumers (permanent renters and permanent homeowners) has actually been less in Phoenix than nationally. The inflation rate felt by the second set of consumers (transient homeowners) in Phoenix was actually greater than the overall inflation rate in both 1977 and 1980, because home purchase prices increased less than overall inflation in those years.

An alternative to the CPI as a measure of inflation is the Gross National Product Implicit Price Deflator (or GNP deflator). There are numerous differences in methodology between this price index and the CPI, one of which is the method of measuring housing inflation. Until 1978 there was virtually no difference between the inflation rates measured by these two indexes. In the last three years, however, the inflation measured by the GNP deflator has been less than that measured by the CPI, though only slightly less than the overall CPI excluding home purchase and mortgage interest costs. The GNP deflator probably underestimates substantially the long-term inflation felt by both the potential homebuyers and transient homeowners, thus its use is not recommended for these consumers, except as a short-term estimate.

The CPI probably has overstated the inflation rate for the average of all American consumers in the past three years, though by only a relatively small amount. For example, in Phoenix, the inflation rate for the average of the four sets of consumers has ranged from approximately one-half to three percentage points less than that measured by the Phoenix CPI in the past three years. To correct this situation, the Department of Labor, which generates the national CPI, and upon whose specifications the Metropolitan Phoenix CPI is generated, has announced that it plans to revise the method of computing homeownership costs, effective with its next major revision, probably in 1985.

A Survey of Arizona Business Conditions

HAROLD FEARON

The Arizona economy showed signs of an early revival in March, according to results from the monthly business survey of the Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona. Following the lackluster performance in February, both the new orders received and production indicators registered nice increases. Even the price indicator showed signs of continued moderation. The only negative sign was a slight drop in employment, but that is likely only a temporary condition.

The purchasing business survey is in its nineteenth year of consecutive monthly reporting on the current status of the Arizona economy. Data are gathered through a questionnaire sent at the close of each month to purchasing managers throughout the state, asking them to indicate the direction of activity — higher, unchanged, or lower — on six key indicators of economic activity in the month just ended. Since these purchasing managers deal daily with the forces of supply and demand, they are in a prime position to provide timely and accurate information on current business trends, which enables economic turning points to be spotted.

Prices paid for major purchased items went up again in March, but the increase rate is moderating. The March increase was the lowest since last August and substantially under the increase rates of almost every month of 1978 through 1980. Fifty percent of the purchasing managers reported they paid higher prices in March than in February; 46 percent saw prices unchanged; and 4 percent said prices declined. While there is still a long way to go before the economy reaches anything close to an acceptable inflation rate, the signs are encouraging and it is likely that the overall rate of price hikes during 1981 will be the lowest in several years.

Delivery time on shipments from vendors continued to stretch out, and at a rate slightly greater than in February but still under that of the final quarter of 1980. Longer delivery times were reported by 25 percent of the firms, while 13 percent got faster service from their suppliers. The pressure on vendor deliveries has lessened somewhat, due to the slower overall economic growth in the first quarter, and vendors now are able to respond to buyers' needs with reasonable promptness.

Inventory levels of purchased materials declined again in March, and at the same rate as in February. However, neither month saw any major drop. Inventory has fallen in ten out of the past twelve months, and March saw 33 percent of the firms cutting stocks, compared to 26 percent who increased inventory. The inventory levels, relative to orders and production, appear to be in good shape.

New orders received from customers registered a nice increase, the third consecutive one, and the highest jump since last September. Thirty-six percent said their

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order books grew in March, compared to only 23 percent who booked less business in March than in February. Thus, Arizona firms are seeing a nice recovery in the rate at which incoming business is being received, and this will continue to stimulate the economy as we move into the second quarter.

Production jumped substantially in March, following February's zero growth. Higher output was reported by 37 percent of the firms, which was over twice the 17 percent who cut output. The March increase was the highest in over a year (since October of 1979), and as new orders follow an upward trend, additional output will be needed to meet customer demand.

Employment decreased in March, following three months of essentially no growth. This was the only negative sign reported in the March survey, but the 23 percent who pared payrolls was not that much larger than the 18 percent who reported an increase in their work force. Actually, employment has held up well over the past year of slow economic growth, and the March decline probably is only a temporary phenomenon, which should be reversed over the next few months.

Thus, Arizona's business growth appears to have snapped back as we reach the end of the first quarter. While the economy's performance in March was less than spectacular, it is following an upward trend and conditions appear right for a continuation and strengthening of this trend in the second quarter.

The results of the March purchasing survey are shown in Table 1.

TABLE 1

MARCH PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (March compared to February)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	50	46	4
Delivery time from vendors	25	62	13
Purchased materials inventory level	26	41	33
New orders received	36	41	23
Production	37	46	17
Employment	18	59	23

Source: Survey of the Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

ARIZONA SALES OF ELECTRICAL POWER

By Month in Millions of KWH*

Current Month:	*Actual:*		*Percent Change Current Month From:*	
	1981	*1980*	*Same Month/ Previous Year*	*Previous Month*
February	2157.6	2016.5	+ 7.0	-8.1

* Based on reports from major suppliers.

Maricopa County Retail Food Prices

MARCH, 1981

Retail food prices in Maricopa County rose 0.5 percent in March, following a 0.7 percent increase in February. The food price survey is compiled by the Bureau of Business and Economic Research, College of Business Administration, at Arizona State University. Cosponsor of the study is Valley National Bank.

The March index of 261.7 indicates that shoppers would now have to pay $26.17 for a similar basket of foods that would have cost $10.00 in 1967. These foods could have been purchased for $23.38 one year ago. The March, 1981, index reflects an 11.9 percent increase over the March, 1980, value.

The moderate gain in the March index value was due to increases in all but one of the subgroups. Both *Meats, Poultry, Fish, and Eggs* and *Other Foods* rose 0.7 percent, followed by *Fruits and Vegetables* (0.2 percent) and *Dairy Products* (0.1 percent). A slight decline of -0.1 percent was noted for *Cereals and Bakery Products.*

The higher index value for *Meats, Poultry, Fish, and Eggs* was primarily due to higher prices for chicken and pork. Fresh or frozen chicken parts rose 19.4 percent, followed by fresh whole chicken (15.1 percent). Also increasing were most pork items, notably pork chops (5.3 percent), sausage (4.2 percent), and canned ham (3.4 percent). These gains were partially offset by price reductions for lamb and organ meats (-5.8 percent), eggs (-4.2 percent), and chuck roast (-2.3 percent).

Increases in several categories contributed to the boost in the *Other Foods* subgroup. Accelerating prices for peanut butter were responsible for a 12.2 percent hike in the category of nondairy substitutes, imitation milk, and peanut butter. Also rising were prices for margarine (5.5 percent) and candy/chewing gum (2.8 percent). The most notable decline in this subgroup was roasted coffee, down 2.4 percent.

Contributing to the increase in *Fruits and Vegetables* were higher prices for lettuce (up 11.1 percent) and bananas (5.7 percent). Escalating prices for frozen orange juice pushed the category of frozen fruit and fruit juices up 4.6 percent. After three months of soaring prices, tomatoes fell 10.6 percent this month, partially holding down advances in the total subgroup. Declining prices were also noted for apples (-7.6 percent), miscellaneous fresh vegetables (-4.6 percent), and oranges (-3.4 percent).

There were only slight movements in prices in the *Dairy Products* and *Cereals and Bakery Products* subgroups during March. The gain of 5.7 percent for the category of dairy products other than butter, cheese, and ice cream was due primarily to increases in yogurt prices. Partially counteracting that advance was a 2.3 percent drop for fresh milk (other than whole milk) and cream. In the *Cereals and Bakery Products* subgroup, prices fell for bread other than white (-3.2 percent) and cookies (-0.5 percent), while the category of rice, macaroni, and cornmeal rose 2.6 percent.

A comparison of December, 1980, Food Consumed at Home index for Maricopa County with index values for four selected metropolitan areas (Table 1) reveals that the outlays required to purchase a foodstuffs group in December, 1980 (obtainable for an outlay of $10.00 at 1967 average prices) were $25.56 in Maricopa County; $26.15 in Los Angeles-Long Beach; $26.80 in San Francisco-Oakland; $26.56 in Chicago-Northwestern Indiana; and averaged $26.39 in the United States.

TABLE 1

INDEX FOR FOOD CONSUMED AT HOME
Maricopa County, United States, and Selected Metropolitan Areas
(Average 1967 = 100 percent)

Group	*Maricopa County Mar. '81*[a]	*Maricopa County Dec. '80*[b]	*United*[*] *States Dec. '80*	*Los Angeles Long Beach*[*] *Dec. '80*	*San Francisco Oakland*[*] *Dec. '80*	*Chicago*[*] *Northwestern Indiana Dec. '80*
Food Consumed at Home	261.7	255.6	263.9	261.5	268.0	265.6
Cereals and Bakery Products	248.4	237.7	258.5	262.6	263.4	264.9
Meats, Poultry, Fish, and Eggs	262.9	264.6	255.7	254.1	262.4	264.1
Dairy Products	229.2	225.5	238.0	230.8	232.8	229.7
Fruits and Vegetables	249.5	236.9	255.6	250.7	264.8	257.7
Other Foods Consumed at Home	293.5	283.6	317.1	311.4	325.5	318.6

[*] Computed from data contained in *The Consumer Price Index*, U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

[a] Maricopa County food prices are reported for the month closest to publication.

[b] Comparisons of food prices among various cities and the United States average are made on the basis of earlier months because of the lag in collecting price reports from these other areas.

Note: Index Comparisons between Maricopa County and the other regions show only that food prices in Maricopa County have increased more or less than food prices in the other regions since 1967. The indexes cannot be used to determine the actual differences in food price levels between the regions.

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperative cosponsorship with Valley National Bank.

Arizona Building Permits: Monthly Report

FEBRUARY, 1981

	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
APACHE CO.	12	113,000	3	—	1	75,000	1	9,000	17	197,000
Eagar	2	57,500	—	—	1	75,000	—	—	3	132,500
St. Johns	2	N/C	—	—	—	—	—	—	2	N/C
Springerville	4	N/C	3	N/C	—	—	—	—	7	N/C
Unincorporated	4	55,500	—	—	—	—	1	9,000	5	64,500
COCHISE CO.	62	971,957	8	1,819,812	2	25,200	88	220,523	160	3,037,492
Benson	2	76,500	1	250,000	1	24,000	5	38,200	9	388,700
Bisbee	5	7,000	—	—	—	—	—	—	5	7,000
Douglas	4	45,219	—	—	—	—	22	54,810	26	100,029
Huachuca City	1	3,000	—	—	—	—	—	—	1	3,060
Sierra Vista	17	283,903	2	1,538,512	—	—	53	104,973	72	1,927,388
Tombstone	—	—	—	—	—	—	1	500	1	500
Unincorporated	27	520,835	5	31,300	1	1,200	6	20,040	39	573,375
Willcox	6	35,500	—	—	—	—	1	2,000	7	37,500
COCONINO CO.	97	2,392,860	16	670,628	2	66,500	22	194,210	137	3,324,198
Flagstaff	20	844,817	9	411,798	2	66,500	13	27,935	44	1,351,050
Fredonia	4	62,000	—	—	—	—	—	—	4	62,000
Page	31	500,940	3	14,300	—	—	1	160,500	35	675,740
Unincorporated	41	971,103	4	244,530	—	—	5	3,500	50	1,219,133
Williams	1	14,000	—	—	—	—	3	2,275	4	16,275
GILA CO.	52	637,556	1	—	—	—	31	197,540	84	835,096
Globe	8	19,200	—	—	—	—	6	13,900	14	33,100
Hayden	—	—	—	—	—	—	—	—	—	—
Miami	3	15,500	—	—	—	—	—	—	3	15,500
Payson	14	83,336	1	—	—	—	19	3,340	34	86,676
Unincorporated	27	519,520	—	—	—	—	6	180,300	33	699,820
GRAHAM CO.	33	302,859	5	91,800	—	—	1	500	39	395,159
Pima	2	3,500	—	—	—	—	—	—	2	3,500
Safford	9	137,938	4	86,800	—	—	1	500	14	225,238
Thatcher	5	6,980	—	—	—	—	—	—	5	6,980
Unincorporated	17	154,441	1	5,000	—	—	—	—	18	159,441
GREENLEE CO.	2	65,385	1	1,000	—	—	—	—	3	66,385
Clifton	—	—	—	—	—	—	—	—	—	—
Duncan	—	—	—	—	—	—	—	—	—	—
Unincorporated	2	65,385	1	1,000	—	—	—	—	3	66,385
MARICOPA CO.	2,133	59,902,993	98	24,703,978	33	10,581,638	1,624	18,906,863	3,888	114,095,472
Avondale	—	—	—	—	—	—	10	11,440	10	11,440
Buckeye	3	52,074	1	125,000	—	—	2	3,000	6	180,074
Chandler	114	2,767,116	—	—	2	590,000	155	699,908	271	4,057,024
El Mirage	2	36,436	—	—	—	—	4	23,900	6	60,336
Gila Bend	—	—	—	—	—	—	1	500	1	500
Gilbert	21	517,280	2	125,880	—	—	25	27,393	48	670,553
Glendale	133	3,062,020	3	247,200	—	—	161	2,523,600	297	5,832,820
Goodyear	—	—	1	279,930	—	—	9	483,154	10	763,084
Guadalupe	4	14,780	—	—	—	—	1	2,592	5	17,372
Mesa	180	6,192,344	16	2,700,812	4	1,109,866	258	4,804,826	458	14,807,848
Paradise Valley	15	233,602	—	—	—	—	—	—	15	233,602
Peoria	37	867,238	3	713,000	—	—	60	80,636	100	1,660,874
Phoenix	736	23,384,062	43	16,114,895	16	6,215,072	570	5,654,228	1,365	51,368,257
Scottsdale	104	4,720,587	11	1,612,961	—	—	147	1,066,676	262	7,400,224
Surprise	9	58,100	—	—	—	—	1	200	10	58,300
Tempe	111	4,129,800	4	150,100	10	666,700	35	289,200	160	5,235,800
Tolleson	8	26,595	1	13,000	—	—	1	500	10	40,095
Unincorporated	627	13,754,495	12	2,578,000	1	2,000,000	181	3,209,740	821	21,542,235
Wickenburg	4	65,500	1	43,200	—	—	1	25,000	6	133,700
Youngtown	25	20,964	—	—	—	—	2	370	27	21,334

Arizona Building Permits: Monthly Report (Continued)

FEBRUARY, 1981

	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
MOHAVE CO.	255	3,574,852	17	1,245,579	—	—	247	2,563,485	518	7,383,916
Kingman City	25	375,814	2	537,000	—	—	9	15,412	36	928,226
Kingman Area	52	565,523	—	—	—	—	43	46,256	95	611,779
Lake Havasu City	46	1,234,032	2	243,419	—	—	37	2,130,653	85	3,608,104
Lake Havasu Area	6	34,240	1	17,280	—	—	16	30,166	23	81,686
Mohave Valley N.	65	710,921	9	392,812	—	—	80	236,872	154	1,340,605
Mohave Valley S.	37	361,731	1	11,232	—	—	42	86,146	80	459,109
Dolan Springs	10	101,312	2	43,836	—	—	9	9,370	21	154,518
Sacramento Valley	7	86,283	—	—	—	—	7	2,834	14	89,117
Mohave Co. General	7	104,996	—	—	—	—	4	5,776	11	110,772
NAVAJO CO.	66	1,095,974	3	121,545	2	59,532	3	11,920	74	1,288,971
Holbrook	2	9,500	—	—	—	—	1	10,000	3	19,500
Show Low	6	46,500	—	—	2	59,532	—	—	8	106,032
Snowflake	4	N/C	—	—	—	—	—	—	4	N/C
Taylor	4	50,000	1	60,000	—	—	—	—	5	110,000
Unincorporated	37	699,474	2	61,545	—	—	1	1,120	40	762,139
Winslow	13	290,500	—	—	—	—	1	800	14	291,300
PIMA CO.	764	16,884,161	40	29,029,071	2	102,139	408	2,162,270	1,214	48,177,641
Marana	3	N/C	—	—	—	—	1	N/C	4	N/C
Oro Valley	—	—	—	—	—	—	—	—	—	—
South Tucson	9	5,800	1	10,752	2	102,139	4	6,800	16	125,491
Tucson	313	6,026,161	23	2,746,519	—	—	203	1,164,545	539	9,937,225
Unincorporated	439	10,852,200	16	26,271,800	—	—	200	990,925	655	38,114,925
PINAL CO.	251	2,075,871	3	107,320	—	—	75	291,305	329	2,474,496
Apache Jct.	33	508,522	2	52,320	—	—	28	28,536	63	589,378
Casa Grande	9	458,368	—	—	—	—	11	98,179	20	556,547
Coolidge	16	50,864	—	—	—	—	6	15,400	22	66,264
Eloy	1	1,000	—	—	—	—	5	2,450	6	3,450
Florence	1	1,000	—	—	—	—	4	9,670	5	10,670
Kearny	3	36,900	—	—	—	—	—	—	3	36,900
Mammoth	—	—	—	—	—	—	—	—	—	—
Superior	2	N/C	—	—	—	—	2	N/C	4	N/C
Unincorporated	186	1,019,217	1	55,000	—	—	19	137,070	206	1,211,287
SANTA CRUZ CO.	23	540,755	4	280,600	1	5,000	13	90,547	41	916,902
Nogales	11	39,175	—	—	—	—	10	66,535	21	105,710
Patagonia	3	55,000	3	60,600	1	5,000	1	50	8	120,650
Unincorporated	9	446,580	1	220,000	—	—	2	23,962	12	690,542
YAVAPAI CO.	187	6,189,709	5	129,060	1	9,000	76	207,637	269	6,535,406
Chino Valley	12	430,315	—	—	—	—	1	500	13	430,815
Clarkdale	5	119,560	—	—	—	—	1	400	6	119,960
Cottonwood	20	264,292	—	—	—	—	6	8,650	26	272,942
Jerome	—	—	2	4,700	—	—	1	2,300	3	7,000
Prescott	33	1,042,196	1	85,860	—	—	30	91,384	64	1,219,440
Prescott Valley	16	311,564	—	—	—	—	—	—	16	311,564
Unincorporated	101	4,021,782	2	38,500	1	9,000	37	104,403	141	4,173,685
YUMA CO.	221	5,886,735	15	1,281,829	1	96,930	34	414,116	271	7,679,610
Parker	—	—	—	—	—	—	3	147,000	3	147,000
Somerton	11	550,800	—	—	—	—	2	1,700	13	552,500
Unincorporated	164	4,346,330	8	427,080	—	—	14	158,020	186	4,931,430
Wellton	—	—	—	—	—	—	—	—	—	—
Yuma	46	989,605	7	854,749	1	96,930	15	107,396	69	2,048,680
Total Maricopa Co., February, 1981	2,133	59,902,993	98	24,703,978	33	10,581,638	1,624	18,906,863	3,888	114,095,472
Total Maricopa Co., February, 1980	1,988	37,619,461	116	35,588,583	44	21,019,450	1,650	18,353,980	3,798	112,581,474
Percent Change	7	59	-15	-30	-25	-49	-1	3	2	1
Total Arizona, February, 1981	4,158	100,634,667	219	59,482,222	45	11,020,939	2,623	25,269,916	7,045	196,407,744
Total Arizona, February, 1980	4,150	68,705,131	242	54,602,404	45	21,033,011	2,408	24,297,188	6,845	168,637,734
Percent Change	—	46	-9	8	—	-47	8	4	2	16

*Includes mobile homes. N/C: Not collected.

Arizona New Housing Starts: Monthly Report

FEBRUARY, 1981

BUILDING PERMITS ISSUED

	1 Family	*Mobile * Homes*	*Duplex*	*3-4 Families*	*5 or More*	*Total Units*
APACHE CO.	10	1	—	—	1	35
Eagar	2	—	—	—	—	2
St. Johns	—	1	—	—	—	1
Springerville	4	—	—	—	1	28
Unincorporated	4	—	—	—	—	4
COCHISE CO.	16	17	—	—	1	133
Benson	—	—	—	—	—	—
Bisbee	—	—	—	—	—	—
Douglas	1	—	—	—	—	1
Huachuca City	—	—	—	—	—	—
Sierra Vista	5	2	—	—	1	107
Tombstone	—	—	—	—	—	—
Unincorporated	9	13	—	—	—	22
Willcox	1	2	—	—	—	3
COCONINO CO.	44	23	—	3	—	79
Flagstaff	14	—	—	3	—	26
Fredonia	1	2	—	—	—	3
Page	6	12	—	—	—	18
Unincorporated	23	8	—	—	—	31
Williams	—	1	—	—	—	1
GILA CO.	11	12	—	—	—	23
Globe	—	—	—	—	—	—
Hayden	—	—	—	—	—	—
Miami	—	—	—	—	—	—
Payson	5	6	—	—	—	11
Unincorporated	6	6	—	—	—	12
GRAHAM CO.	6	9	—	1	—	19
Pima	—	2	—	—	—	2
Safford	3	—	—	1	—	7
Thatcher	—	—	—	—	—	—
Unincorporated	3	7	—	—	—	10
GREENLEE CO.	2	—	—	—	—	2
Clifton	—	—	—	—	—	—
Duncan	—	—	—	—	—	—
Unincorporated	2	—	—	—	—	2
MARICOPA CO.	1,223	170	15	8	16	2,055
Avondale	—	—	—	—	—	—
Buckeye	2	—	—	—	—	2
Chandler	88	—	—	—	—	88
El Mirage	1	1	—	—	—	2
Gila Bend	—	—	—	—	—	—
Gilbert	12	1	—	1	—	17
Glendale	111	—	—	—	—	111
Goodyear	—	—	—	—	—	—
Guadalupe	—	—	—	—	—	—
Mesa	139	—	8	3	5	212
Paradise Valley	—	—	—	—	—	—
Peoria	35	—	—	—	—	35
Phoenix	429	37	2	2	11	1,034
Scottsdale	66	—	—	1	—	69
Surprise	1	4	—	—	—	5
Tempe	65	—	1	1	—	71
Tolleson	—	—	1	—	—	2
Unincorporated	272	127	3	—	—	405
Wickenburg	2	—	—	—	—	2
Youngtown	—	—	—	—	—	—

BUILDING PERMITS ISSUED

	1 Family*	*Mobile* Homes*	*Duplex*	*3-4 Families*	*5 or More*	*Total Units*
MOHAVE CO.	63	78	—	2	—	147
Kingman City	10	1	—	—	—	11
Kingman Area	4	31	—	—	—	35
Lake Havasu City	29	1	—	—	—	30
Lake Havasu Area	—	2	—	—	—	2
Mohave Valley N.	8	19	—	2	—	33
Mohave Valley S.	5	13	—	—	—	18
Dolan Springs	2	5	—	—	—	7
Sacramento Val.	2	3	—	—	—	5
Mohave General	3	3	—	—	—	6
NAVAJO CO.	25	17	1	—	—	44
Holbrook	—	—	—	—	—	—
Show Low	2	2	—	—	—	4
Snowflake	4	—	—	—	—	4
Taylor	1	3	—	—	—	4
Unincorporated	11	11	1	—	—	24
Winslow	7	1	—	—	—	8
PIMA CO.	298	192	12	8	2	556
Marana	—	2	—	—	—	2
Oro Valley	—	—	—	—	—	—
South Tucson	—	—	—	—	—	—
Tucson	121	45	9	8	2	226
Unincorporated	177	145	3	—	—	328
PINAL CO.	51	151	—	1	—	206
Apache Junc.	10	14	—	—	—	24
Casa Grande	8	—	—	—	—	8
Coolidge	—	2	—	—	—	2
Eloy	—	—	—	—	—	—
Florence	—	—	—	—	—	—
Kearny	1	—	—	—	—	1
Mammoth	—	—	—	—	—	—
Superior	—	—	—	—	—	—
Unincorporated	32	135	—	1	—	171
SANTA CRUZ CO.	10	1	—	1	—	15
Nogales	1	—	—	—	—	1
Patagonia	1	1	—	1	—	6
Unincorporated	8	—	—	—	—	8
YAVAPAI CO.	83	44	—	1	—	131
Chino Valley	4	5	—	—	—	9
Clarkdale	3	—	—	—	—	3
Cottonwood	4	5	—	—	—	9
Jerome	—	—	—	—	—	—
Prescott	17	—	—	1	—	21
Prescott Valley	8	7	—	—	—	15
Unincorporated	47	27	—	—	—	74
YUMA CO.	98	66	—	2	5	201
Parker	—	—	—	—	—	—
Somerton	11	—	—	—	—	11
Unincorporated	67	66	—	—	—	133
Wellton	—	—	—	—	—	—
Yuma	20	—	—	2	5	57
Total, Maricopa Co., February, 1981	1,223	170	15	8	16	2,055
Total, Maricopa Co., February, 1980	906	187	5	9	20	1,513
Percent Change	34	-9	200	-11	-19	35
Total, Arizona, February, 1981	1,940	781	28	27	25	3,646
Total, Arizona, February, 1980	1,626	586	13	31	21	2,817
Percent Change	19	33	115	-13	19	29

*Beginning with the January report, mobile home permits are listed separately instead of being included with single-family permits.

N/R: No report; data for this month will be for the following month.

Metropolitan Phoenix Consumer Price Index

FIRST QUARTER, 1981

Prices of goods and services typically purchased by households in the Phoenix metropolitan area rose 3.1 percent during the first quarter of 1981, comparing favorably with the 3.3 percent rise posted for the fourth quarter of 1980. The rise in consumer prices for the Phoenix area is larger than the increase posted for the United States as a whole (2.7 percent) and higher than the comparison cities of Los Angeles (2.4 percent) and Chicago, which posted a decrease of -0.1 percent.

In comparison with the fourth quarter of 1980, however, the one-year increase of 9.3 percent for Phoenix is less than the increase posted for the nation as a whole (11.3 percent), Chicago (11.6 percent), and Los Angeles (10.1 percent). Although this quarter's percentage change from a year ago is substantially less than the 13.3 percentage increase posted during the one-year period ending with the fourth quarter of 1980, it should not necessarily be interpreted as a sharp decline in Phoenix area inflation. The rate for Phoenix is low this quarter because the year-ago percentage changes include the second quarter of 1980 when prices rose by only 0.1 percent, primarily due to a large drop in mortgage interest rates.

The Consumer Price Index (CPI) for the Phoenix metropolitan area, on which these inflation measures are based, is prepared by the Bureau of Business and Economic Research, College of Business Administration, at Arizona State University. The quarterly CPI is based on comprehensive surveys conducted by the Bureau of Business and Economic Reasearch in cooperative cosponsorship with Valley National Bank.

In the *Food* category, Food at Home rose 3.0 percent in the first quarter of 1981, slightly less than in the third and fourth quarters of 1980. Large increases in the prices of Fruits and Vegetables (5.3 percent), Cereals and Bakery Products (4.4 percent), and Other Foods (4.0 percent) were tempered by relatively stable prices in Meats, Poultry, Fish, and Eggs (0.2 percent). The Phoenix area Food at Home increase of 3.0 percent for the first quarter compares unfavorably with the United States, Chicago, and Los Angeles averages of 2.0 percent, 2.4 percent, and 2.2 percent, respectively. Since the first quarter of 1980, the increase for Phoenix Food at Home prices of 12.2 percent has been higher than the one-year increases posted for the United States (10.8 percent), Chicago (10.6 percent) and Los Angeles (10.8 percent). Food Away from Home prices in Phoenix increased less in the first quarter (2.4 percent) than in any of the four quarters of 1980. Food Away from Home prices have increased 11.3 percent since one year ago, a rate exceeded by most items in the overall *Food* category.

The price index for *Housing* increased 3.1 percent in the first quarter, down from the 3.8 percent rise posted for the fourth quarter of 1980. Contracted mortgage interest costs and home purchase prices, the two most important items in the Homeownership subcategory, rose by 4.4 percent and 3.1 percent respectively.

Residential rents continued to have another small increase, only 0.6 percent for the first quarter. Fuel and utility costs rose by 4.7 percent, the largest major increase within the overall *Housing* category. Electricity rates led with an 11.6 percent increase over last quarter.

The change in *Housing* from one year ago is 8.6 percent, comparing favorably with the United States average of 12.1 percent, Chicago (13.1 percent), and Los Angeles (11.3 percent). Percentage changes from one year ago within the Phoenix Housing category are as follows: residential rent, 4.1 percent; contracted mortgage interest costs, 13.0 percent; home purchase prices, 9.1 percent; household furnishings and operations, 6.9 percent. Fuel and Other Utilities again led with a rise of 9.8 percent, reflecting increases in energy costs. In comparison however, fuel and utility rates rose less in Phoenix than in the nation as a whole and the two comparison cities.

Apparel and Upkeep rose at a quarterly rate of 2.0 percent. Although low in comparison to other major CPI categories and only slightly above past quarters, this increase in Apparel Commodities is the largest since the third quarter of 1979. Rising prices in Men's, Women's and Girls' Apparel were only partially offset by a decline in Boys' Clothing and stable prices for apparel accessories and services. The 4.6 percentage change from one year ago compares favorably with the United States average of 5.9 percent but is higher than the rates for Los Angeles (1.3 percent) and Chicago, which posted a decline of -0.1 percent.

Transportation costs in the Phoenix area increased by 5.4 percent in the first quarter of 1981, up from the rates posted for the previous three quarters of 1980. Transportation costs rose faster in the first quarter than in any of the other seven major CPI categories. Private Transportation in Phoenix increased 5.5 percent over the last quarter, due largely to an 8.7 percent increase in used car prices and a 9.7 percent increase in gasoline costs. Other private transportation costs remained relatively constant from last quarter, including new car and insurance prices. However, in comparison to one year ago, sharp rises in both new car prices (15.0 percent) and vehicle maintenance and repair costs (14.9 percent), pushed the one-year increase for Private Transportation to 8.5 percent. Although now rising rapidly, as of this quarterly report, used car prices had increased only 0.7 percent since the first quarter of 1980.

Public Transportation rose by 3.6 percent during the first quarter, down considerably from the 11.0 percent rise posted for the fourth quarter of 1980. Increases in airline fares (5.5 percent) were offset by stable fares for train, bus and taxi services. Since one year ago, however, public transportation costs have jumped 30.4 percent. This increase has been caused almost entirely by sharp escalations in airline fares (36.1 percent). The *Transportation* category as a whole has increased 9.7 percent from one year ago. Phoenix area transportation costs during the twelve-month period compare favorably with the figures for the nation as a whole (13.1 percent) and Chicago (14.0 percent) and are only slightly above the rate posted for Los Angeles (9.4 percent).

Medical Care in the Phoenix area rose by 1.5 percent in the first quarter, a more moderate rise than the 3.8 and 2.2 percentage increases of the third and fourth quarters of 1980. Prices for hospital and related services rose 7.3 percent, while prices for professional services, drugs, and medical insurance remained relatively constant. The 9.2 percent change from one year ago compares favorably with the rate for the United States as a whole (9.6 percent) and the 9.4 percentage increases posted for both Chicago and Los Angeles.

Entertainment costs rose by only 1.6 percent in the first quarter, compared to a 7.0 percent jump for the fourth quarter of 1980. Entertainment costs in the Phoenix area have increased 12.8 percent since one year ago. Comparable figures for the nation as a whole, Chicago, and Los Angeles are 9.6 percent, 9.2 percent and 9.8 percent respectively.

The costs of *Other Goods and Services* declined by -1.4 percent during the first quarter of 1981. This decline for *Other Goods and Services,* the largest decrease since 1975, was due to lower prices for various tobacco related products and personal care accessories and services.

Note: The complete Metropolitan Phoenix Consumer Price Index and the percentage changes for the United States and comparative cities are found on the following page.

METROPOLITAN PHOENIX CONSUMER PRICE INDEX
FIRST QUARTER 1981
(1969 = 100)

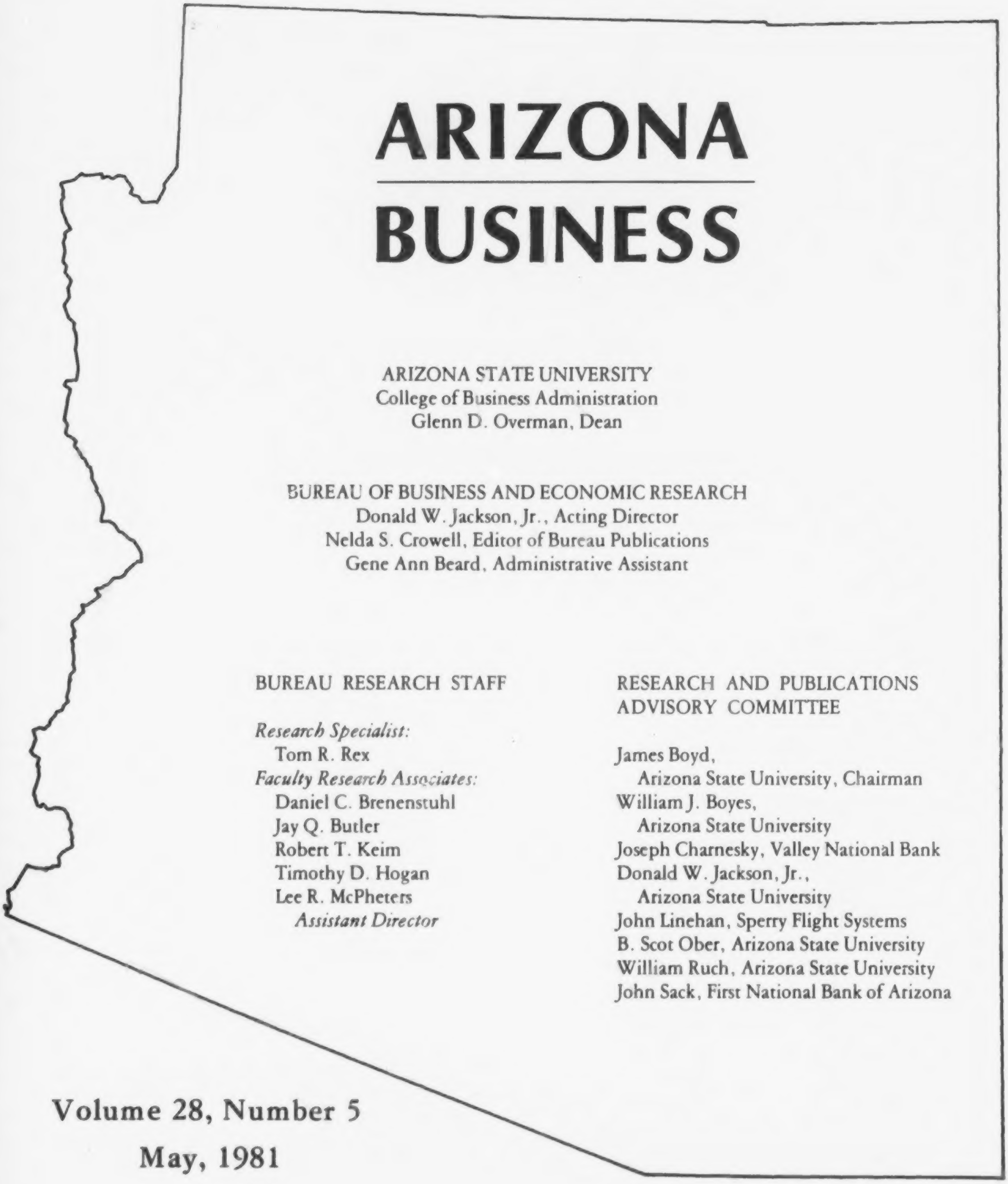
Group	*Fourth Quarter 1980 Index*	*First Quarter 1981 Index*	*Percentage Change from Last Quarter*	*Percentage Change from One Year Ago*
All Items	234.0	241.2	3.1	9.3
Food and Beverages	219.9	225.9	2.7	11.6
Food	225.0	231.3	2.8	11.9
Food at Home	235.7	242.8	3.0	12.2
Céreal and Bakery Products	227.4	237.3	4.4	11.9
Meats, Poultry, Fish, and Eggs	233.5	234.0	0.2	7.2
Dairy Products	210.2	217.2	3.3	11.2
Fruits and Vegetables	231.1	243.3	5.3	20.4
Other Food at Home	259.7	270.1	4.0	13.6
Food Away from Home	203.4	208.3	2.4	11.3
Alcoholic Beverages	154.1	156.5	1.6	8.5
Housing	236.9	244.2	3.1	8.6
Shelter	251.0	258.0	2.8	8.6
Rent, Residential	178.3	179.3	0.6	4.1
Homeownership	264.8	273.7	3.4	9.7
Fuel and Other Utilities	236.8	247.9	4.7	9.8
Household Furnishings and Operations	191.7	197.8	3.2	6.9
Apparel and Upkeep	174.5	177.9	2.0	4.6
Apparel Commodities	164.1	168.1	2.5	2.4
Men's and Boys' Apparel	150.6	153.1	1.6	2.0
Women's and Girls' Apparel	159.4	164.9	3.5	3.9
Footwear	201.4	204.9	1.7	-2.0
Transportation	248.4	261.7	5.4	9.7
Private Transportation	245.4	258.9	5.5	8.5
Public Transportation	299.6	310.4	3.6	30.4
Medical Care	317.3	322.2	1.5	9.2
Entertainment	202.2	205.5	1.6	12.8
Other Goods and Services	226.2	223.1	-1.4	6.3
Personal Care	222.2	220.3	-0.9	5.2

Note: Cosponsor of the Metropolitan Phoenix Consumer Price Index is Valley National Bank. This credit was inadvertently omitted from the CPI tables in the March issue of *Arizona Business*.

UNITED STATES AND COMPARATIVE CITIES

	United States		*Chicago*		*Los Angeles*	
Group	*Percentage Change From Last Quarter*	*Percentage Change From One Year Ago*	*Percentage Change From Last Quarter*	*Percentage Change From One Year Ago*	*Percentage Change From Last Quarter*	*Percentage Change From One Year Ago*
ALL ITEMS	2.7	11.3	-0.1	11.6	2.4	10.1
Food	2.4	10.6	2.0	10.1	2.9	10.9
Food at Home	2.0	10.8	2.4	10.6	2.2	10.8
Food Away From Home	3.4	10.2	1.2	9.1	4.1	10.9
Housing	2.6	12.1	-3.4	13.1	2.3	11.3
Shelter	2.0	12.5	-6.3	15.2	2.5	11.8
Fuel & Utilities	6.6	15.4	7.7	10.3	0.5	11.2
Household Furnishings & Operations	1.8	8.0	1.5	6.8	2.2	8.9
Apparel and Upkeep	-1.5	5.9	-5.4	-0.1	-1.7	1.3
Transportation	4.6	13.1	4.9	14.0	3.4	9.4
Medical Care	3.0	9.6	3.7	9.4	2.4	9.4
Entertainment	2.6	9.6	3.6	9.2	2.9	9.8
Other Goods and Services	2.1	9.3	1.8	10.2	1.7	7.2

Source: Metropolitan Phoenix data compiled by the Bureau of Business and Economic Research, College of Business Administration, Arizona State University in cosponsorship with Valley National Bank; other data from U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.



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Report To The Reader

"Little is known about the cost-effectiveness of personnel administration or its contribution to organizational productivity," says Dr. Harold C. White, Professor of Management in the College of Business Administration, Arizona State University. He partially fills that void in this issue of *Arizona Business* with his report on a study of the effectiveness of personnel activities in three local companies.

According to Dr. White, "Most firms make little attempt to maximize the potential for personnel administration to motivate employees for maximum productivity . . . . It is not surprising, therefore, to find that most employees are little aware of the benefits available to them nor that they undervalue the costs and usefulness of the benefits of which they are aware."

The study showed in general, that when employees believed strongly that the employer provided a particular personnel activity, they also felt that the activity increased their job satisfaction and increased their job performance. Communication is an important element in the personnel process. "Employees should be informed completely and continuously about the personnel program," says Dr. White.

Furthermore, Dr. White says, "Management needs to recognize that the characteristics of the employees themselves can affect their perceptions of and reactions to the personnel program." What is a maintaining factor for a company with highly skilled employees may be a motivating factor for a company with relatively less-skilled people.

"Studies of this nature in every organization as a beginning effort, combined with increasing attention to the relationships between personnel administration and organizational effectiveness, can increase the likelihood that personnel administration is not just another major cost of the organization, but is truly an investment in organizational productivity," Dr. White concludes.

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Personnel Administration: Investment or Overhead?

HAROLD C. WHITE

Are business firms getting their money's worth in wages, benefits, and other personnel administration activities? Consider these facts: Companies average $5,560 per employee for benefits, 36.6 percent of total payroll costs.[1] Average weekly earnings increased 85 percent, while average benefits increased 165 percent in a recent ten-year period.[2]

Personnel administration includes activities that relate to obtaining, retaining, and developing employees. With the continued inflationary pressures, plus job skill shortages, labor union demands, government legislation, foreign competition, and increasing awareness of the concepts of employee motivation, personnel administration is growing in importance. Personnel directors are receiving increased authority and status[3] as well as increased budgets and staffs.[4] Top management in all major industries is showing strong support for greater personnel department involvement in most personnel activities.[5]

Three organizations — a bank, a utility, and a specialty manufacturer — were surveyed to identify the contributions of personnel administration for employee satisfaction and employee productivity. The study indicates that employees do indeed believe that the personnel administration program has a positive influence on their job performance and satisfaction.

Harold C. White is Professor of Management, in the College of Business Administration, Arizona State University.

Categories have been identified for measuring personnel administration (Table 1).[6] Nevertheless, little is actually known about the cost-effectiveness of personnel administration or its contribution to organizational

TABLE 1

CATEGORIES FOR MEASURING PERSONNEL ADMINISTRATION

Performance measures

- Overall personnel performance: for example, the unit labor costs per unit of output
- Personnel department costs and performance: the cost per employee of personnel programs

Employee satisfaction measures

- Employee satisfaction with their jobs
- Employee satisfaction with personnel activities such as training, pay, benefits, and career development

Direct measures of personnel performance

- Employee turnover: the rate of resignations as a percentage of labor force and by units over time
- Absenteeism: the rate of voluntary absences of the labor force and by units over time
- Scrap rates
- Other measures of quality
- Rates of employee requests for transfer
- Number of grievances per unit and in total labor force over time
- Safety and accident rates
- Number of improvement suggestions per employee over time

Source: W. Rabe, "Yardsticks for Measuring Personnel Department Effectiveness," *Personnel*, 44 (January/February 1967): 56-62.

productivity. A quarter of a century ago, Peter Drucker observed, "The constant worry of all personnel administrators is their inability to prove that they are making a contribution to the enterprise."[7] A review of the literature covering a forty-year period revealed only one article that provided cost figures for personnel administration and no more than a half dozen articles with data that attempted to demonstrate that any personnel administration activity was cost effective.

OBSTACLES TO PERSONNEL ADMINISTRATION MEASUREMENT

Of the five million employing organizations in the United States, it is estimated that not more than 150 are conducting any personnel administration research.[8] What is limiting the research to determine the effectiveness and efficiency of personnel administration? Nationwide, the median-sized personnel department has a staff of only two or three,[9] making specialization almost impossible and inhibiting any meaningful research.

It also appears that the typical firm expects little in the way of results from its personnel administration program. In a survey of nearly 1,000 firms in a variety of industries,[10] the personnel objective mentioned most was to attract good employees. Yet this was expressed by less than half the respondents. Other objectives were to increase employee job satisfaction, 12 percent; increase morale, 11 percent; reduce turnover, 10 percent; make better use of compensation dollars, 9 percent; enhance the organization's image with its own employees, 7 percent; and keep out labor unions, 5 percent. Only 6 percent of the respondents indicated that an objective of employee benefit programs was to motivate employees to perform more effectively.

The measurement of the contribution of personnel administration to organizational efficiency is difficult. For example, in the mid-1960s, attention was directed toward the use of human resources accounting. To date, results do not appear promising. "The measurement problem is apparently not going to be solved in the near future. A major concern is that testing under operating conditions has almost ceased and industry's interest in experimentation has drastically declined."[11] Most firms that have attempted to capitalize various personnel administration activities have discontinued the practice. While some firms indicate that such methods have internal use, no evidence is reported for such claims. Obstacles that limit the use of human resources accounting include a lack of adequate standards for measurement of human resources, the costs of additional accounting, the subjectivity in the valuation of human assets, and the lack of proven procedures.

Most firms make little attempt to maximize the potential for personnel administration to motivate employees for maximum productivity. In one study, 60 percent of the responding organizations indicated that they had no formal objectives for communicating information about benefits to their employees.[12] Nearly two-thirds of the firms reported spending $10 or less per employee per year in communicating the benefits program. It is not surprising, therefore, to find that most employees are little aware of the benefits available to them or that they undervalue the costs and usefulness of the benefits of which they are aware.

It is certainly possible, however, that some firms have developed meaningful measures but have not published the results because their studies provide them a competitive advantage. Experience suggests that such firms are in the smallest minority, however.

SURVEYED ORGANIZATIONS

The findings reported in this survey are intended as a step toward identifying the contributions of personnel administration for employee satisfaction and employee productivity. Each organization discussed in this article cooperated by providing information about their personnel administration practices, by providing certain cost and performance data, and by allowing operative employees to complete a questionnaire about their perceptions of various personnel administration duties. All of the cooperating organizations and their employees are located in the Phoenix metropolitan area.

Bank

The bank selected for the survey is one of the major financial institutions in the Rocky Mountain area in both size and profitability. The employees surveyed are employed in the computer records section in a central location. The work tends to be repetitive. Performance is measured by such factors as items processed for a given time period. The unit is operated on a twenty-four-hour basis. A wide range of skills are required, with many one-of-a-kind positions.

Formalized job analysis has been introduced. Emphasis is placed on equal employment with goals and timetables included in each supervisor's performance evaluation. Varied recruiting sources are used. A selection process has been developed and validated by the division personnel department, which places emphasis on the weighted application blank format; employee testing has been discontinued.

New employees are given a half-day orientation. Various technical and supervisory training programs are offered with increasing emphasis on courses presented internally. A monthly newspaper and a weekly supplement provide company news and employee features.

Numerous strategies have been introduced to improve employee performance, such as a successful program to reduce time taken for sick leave. The bank states that its wages are higher than those paid by its major competitors, while employee responses to internal surveys indicate that they feel the pay is low but fair. A profit-sharing program is available.

Accident frequency and severity is low for the firm and the industry. The insurance program is considered good but has been controversial within the bank. Three optional insurance programs are available. The work area is clean and the temperature is at a constant, comfortable level, partly to accommodate the computers that are located there. Employees have responded well to background music.

The company has a full-service cafeteria, subsidized 40 percent by the bank. Minimum recreational facilities are provided, but the bank also arranges packaged programs for professional ball games, trips, etc. Physical fitness programs are subsidized. A drug and alcohol counseling program has been in effect for several years and is considered successful.

Eight paid holidays are provided the employees. They also receive two weeks of vacation for two years of service, and a maximum of four weeks of vacation after twenty years of service. Grievances are handled through a combination of open door policy and formalized grievance steps.

Utility

The utility is the largest of the three employers. The firm experienced record profits in the year preceding the survey. The employees included in the study are installers, organized by a labor union, who perform skilled work of a repetitive nature.

The organization does extensive forecasting, which includes planning for personnel requirements. Job design, job analysis, and job evaluation are ongoing processes, for which the company has pioneered much innovative work.

A major objective has been to hire and promote women and minorities. With the exception of minorities, the company has attracted a sufficient number of job applicants for most job classes, so active recruiting is not required.

Selection is rather formalized involving a six-step process that includes testing and interviewing. The personnel department presents a half-day orientation program for all new employees; in addition, each department provides its own specialized orientation.

Classroom and on-the-job training is provided for each operative level employee. The process of selecting people for promotion to supervision is highly formalized. Approximately 80 percent of supervisory positions are filled through promotion from within. Both prior to and following promotion, a series of self-paced and classroom training programs are required.

At the time of employment, and subsequent to the signing of each new contract with the labor union, a publication of benefits is provided each employee. Inhouse publications and bulletin boards are also used as means of communication.

Salaries of the surveyed employees are negotiated with the union and tend to be structured. A stock ownership plan is open to all employees. Bonuses up to 10 percent of base pay are provided to those exceeding standards.

A medical plan is also offered. Because the employees are often away from the central medical service of the firm, they receive emergency medical training. The working environment varies due to the varied areas of work assigned the assemblers.

Cafeteria service, which is available to a large number of employees, is not conveniently located for the majority of the installers. Various company-sponsored social, athletic, and service groups have been formed through the support of the personnel department, but are mainly funded by the employees themselves. Counseling is available for personal and job-related problems. A suggestion system is available but is not promoted and is little used.

Employees receive ten paid holidays each year. Employees with one year employment receive one week of vacation, which is increased on a graduated scale up to five weeks for twenty-five years of employment. Retirement benefits are based on years of service and rate of pay; early retirement is available.

A three-step grievance process is established for union members. Many formalized rules have been set for behavior; corrective action or disciplinary action is specified for infractions.

Extensive research has been conducted to determine the effectiveness of various personnel administration activities. One such study resulted in the reduction of a training program from fourteen to six days, while tests showed the same level of learning was attained. Another training course was reduced from ninety-six to twenty-eight hours with an annual savings of $142,000. Studies have been made to determine the costs of grievances and the savings available when grievances are resolved at the first or second step. Similar studies have been carried out to determine costs for each percentage change in employee absences.

Specialty Goods Manufacturer

This is the smallest of the three firms with fewer than 1,000 employees. Compared to the other two firms, the specialty goods manufacturer is neither as extensive in its personnel program nor as financially successful. As stated by one staff member, "We lack organizational measures. The measure for success is profit, but there is no profit."

Employees covered by this survey are mainly low skilled, who perform machine-paced work to produce a variety of small manufactured items. Little is done in the way of job analysis or the development of job descriptions; however, work duties are closely tied to the short cycle machine activities. Relationships have been developed with community organizations in successful efforts to obtain minority job applicants for entry level positions. Hiring is typically done by the personnel director based on an interview with the applicant.

Starting salary is near the federal minimum wage with increases amounting to nearly 50 percent. The company has no incentive pay plan or other forms of financial rewards. Job posting is used extensively to allow employees to transfer to more desirable positions. Few operative employees are believed by management to possess the necessary characteristics for supervision. Training is conducted on the job by the supervisors. The one attempt to provide supervisory training was labeled a disaster when it was concluded that an outside trainer talked over the heads of the supervisors.

No formal grievance system exists, but employees are encouraged to utilize the open door policy, the suggestion box, and contact with the personnel director if they have a complaint.

While the work area is rather stark in appearance, extensive effort has been directed toward keeping it clean, well lighted, and at a comfortable temperature. Minor job accidents have occurred frequently.

A cafeteria is available for day shift employees only; snack wagon is the only food source available for second shift employees. The firm has provided some support for social and recreational activities, but in general, it has been concluded that employees have little interest. Communication is by a monthly newsletter, employee handbooks, and bulletin boards.

Employee counseling is conducted by the personnel director only. A retirement program is offered, although benefits are minimal. Employees receive seven paid holidays, with one week of vacation after one year of employment and two weeks of vacation after two years of employment. Considerable flexibility is permitted for informal time off. At the time of the survey, for the first time in five years, the company had not experienced a temporary layoff due to insufficient business.

The data on which to evaluate performance is limited, but, compared to other units in the organization, the surveyed employees are considered more productive and create fewer personnel problems.

Most of the employees in the surveyed unit are women who have a high school education or less, and earn less than $7,500 a year.

METHODOLOGY

For each of twenty-nine personnel administration activities listed on the questionnaire, respondents were asked to indicate on a five-point scale (1 for least and 5 for most) how much they were aware that their employer was involved in the activity. That is, they were asked to give their perception of their employer's investment or commitment in the various activities of personnel administration. They were also asked to indicate, again on five-point scales, their level of satisfaction with each activity, and how much they believed their performance was affected by each activity. Thirty-eight bank employees, twenty utility employees, and fifty-two specialty goods manufacturer employees were surveyed.

Tables 2 (bank), 3 (utility), and 4 (specialty manufacturer) summarize the results of the study. On the left of each table are the lists of personnel administration activities, each categorized according to its appropriate function. The remaining columns provide the profiles of mean responses of the respondents. The left column indicates the average perception of the amount the firm is involved in each personnel activity. The next column indicates the level of satisfaction which the respondents report they felt as a result of the personnel activity. The right hand column indicates the level of impact the respondents believed that each personnel activity had on their performance.

The weaknesses of self-reports as used in this study are recognized,[13] but it is believed that this approach is a practical means to begin research on the impact of personnel administration practices on employee performance and satisfaction.[14]

RESULTS

The data indicate, in general, that the more the respondents believed that their employer provided a particular personnel activity, the more they felt that the activity had a positive effect on their satisfaction and the more they perceived the activity had a positive influence on their job performance.

Bank

The bank employees, Table 2, rated the bank as being involved an average of 3.8 on the 5-point scale for all of the twenty-nine personnel activities. Both average satisfaction and average perceived performance were also 3.8. These responses are higher than those reported by the employees of the other two firms. The bank employees reported that their employer was highly involved (above 3.5) for twenty-three of the personnel activities, and little involved (below 2.5) for only one activity. They also indicated that they were highly satisfied (above 3.5) with nineteen of the activities, and dissatisfied (below 2.5) for none. They also reported that nineteen of the activities had a positive effect on their performance (above 3.5), while none of the activities had a negative effect (below 2.5).

Bank employees perceived that the bank was most involved overall in the personnel administration function of developing (orientation, training, and personnel administration communication), followed by the identifying function (human resources planning and job descriptions) and the retaining-compensation function (wage and salary, incentive pay, and profit sharing/stock options).

Utility

The utility company employees, Table 3, rated their employer as being involved in all of the personnel activities an average of 3.3, and both their satisfaction and performance as a result of the personnel activities an average of 3.4. Ten of the personnel activities were identified as those in which the company was highly involved, and four activities in which they were little involved. The employees indicated twelve of the activities that contributed highly to their satisfaction and two that contributed to their dissatisfaction. Twelve of the activities were perceived by the employees as having a positive effect on their performance and one that had a negative effect.

The employees perceived that their firm was most involved overall in the identifying function (human resources planning and job descriptions), followed by the retaining-environment function (medical insurance, medical service, healthful working conditions, safe working conditions, food service, social and recreational service, and vacations and holidays).

Specialty Goods Manufacturer

In Table 4, the average involvement by the specialty goods manufacturer for all personnel activities (as perceived by the surveyed employees) was 3.3. Average satisfaction was 3.6, and average perceived impact on performance was 3.7. The specialty employees indicated that their firm was much less involved in personnel activities than was reported by the employees of the other two firms. Indeed, the records of the firms confirm that this was an accurate evaluation. Specialty employees reported that there were only eight activities for which the firm was highly involved and four for which the firm was little involved. Nonetheless, these employees reported a greater number of the personnel activities had a positive effect on both their satisfaction and performance. Twenty-two of the personnel activities were felt to have a positive effect on satisfaction, while none had a negative effect. For perceived performance, twenty-two had a positive effect and none had a negative effect.

Specialty employees perceived their employer as being most involved in the identifying function (human resources planning and job descriptions), followed by the obtaining function (recruiting and selecting) and the measuring function (performance appraisal, morale surveys, and personnel administration research).

PERSONNEL ADMINISTRATION AS AN INVESTMENT

A measure of the effectiveness of the personnel program is the level of satisfaction and job performance resulting from the investment by the firm in the various personnel activities. For example, if employees per-

TABLE 2

PROFILE OF PERSONNEL ADMINISTRATION ACTIVITIES AS REPORTED BY BANK SERVICE UNIT OPERATORS

(N = 38)

		Perceived Company Involvement in Personnel Activities	*Reported Effect of Personnel Administration Activities*	
			Satisfaction	*Performance*
Functions	*Personnel Administration Activities*	*1 2 3 4 5*	*1 2 3 4 5*	*1 2 3 4 5*
Identifying	Human Resources Planning	3.8	4.1	4.0
	Job Description	4.1	3.9	4.1
Obtaining	Recruiting	3.1	3.4	3.6
	Selecting	3.6	3.8	3.9
Developing	Orientation	4.2	4.2	4.3
	Training	4.4	4.4	4.4
	Personnel Administration Communication	4.4	4.4	4.1
Retaining—Compensation	Wage and Salary	3.8	3.8	4.2
	Incentive Pay	4.1	4.5	4.5
	Profit Sharing/Stock Option	3.9	3.6	3.3
Retaining—Environment	Medical Insurance	4.3	4.0	3.7
	Medical Service	2.9	3.3	3.1
	Healthful Working Conditions	3.7	3.5	3.6
	Safe Working Conditions	4.5	4.0	4.1
	Food Service	2.3	2.6	2.8
	Recreation/Social Service	3.3	3.4	3.1
	Vacations/Holidays	3.7	4.0	4.2
Adjusting	Employee Counseling	4.1	3.7	3.6
	Suggestion System	3.5	3.4	3.4
	Promotions	4.0	4.1	4.2
	Transfers	3.7	3.6	3.7
	Layoffs	4.2	3.5	3.7
	Retirement	3.6	3.5	3.5
	Grievance Procedure	3.8	3.6	3.5
	Discipline	3.9	3.6	3.8
Measuring	Performance Appraisal	4.3	4.1	4.2
	Morale Surveys	2.7	3.3	3.1
	Personnel Administration Research	3.6	3.4	3.4
	Affirmative Action/EEO	4.4	3.7	3.4
Mean		3.8	3.8	3.8

Source: Survey conducted by the author.

TABLE 3

PROFILE OF PERSONNEL ADMINISTRATION ACTIVITIES AS REPORTED BY UTILITY COMPANY INSTALLERS (N = 20)

Functions	*Personnel Administration Activities*	*Perceived Company Involvement in Personnel Activities* (1 2 3 4 5)	*Reported Effect of Personnel Administration Activities*: *Satisfaction* (1 2 3 4 5)	*Reported Effect of Personnel Administration Activities*: *Performance* (1 2 3 4 5)
Identifying	Human Resources Planning	3.1	3.4	3.3
	Job Description	4.0	3.7	3.7
Obtaining	Recruiting	2.8	3.4	3.3
	Selecting	3.0	3.7	3.6
Developing	Orientation	3.4	3.4	3.3
	Training	3.5	3.6	3.8
	Personnel Administration Communication	3.2	3.1	3.1
Retaining—Compensation	Wage and Salary	3.3	4.2	4.1
	Incentive Pay	1.5	2.8	2.8
	Profit Sharing/Stock Option	4.0	3.6	3.5
Retaining—Environment	Medical Insurance	4.4	4.4	4.4
	Medical Service	4.2	4.0	4.1
	Healthful Working Conditions	3.7	3.4	3.1
	Safe Working Conditions	4.2	4.1	4.1
	Food Service	2.1	2.4	2.4
	Recreation/Social Service	2.2	2.6	2.7
	Vacations/Holidays	4.0	4.5	4.3
Adjusting	Employee Counseling	2.2	2.4	2.5
	Suggestion System	2.8	2.6	2.7
	Promotions	2.9	2.7	3.0
	Transfers	3.3	3.6	3.6
	Layoffs	2.7	3.0	3.1
	Retirement	3.4	3.9	3.9
	Grievance Procedure	3.6	3.5	3.5
	Discipline	3.5	3.5	3.6
Measuring	Performance Appraisal	3.7	3.3	3.6
	Morale Surveys	1.7	2.7	2.9
	Personnel Administration Research	3.0	2.9	2.9
	Affirmative Action/EEO	4.5	2.6	2.9
Mean		3.3	3.4	3.4

Source: Survey conducted by the author.

TABLE 4

PROFILE OF PERSONNEL ADMINISTRATION ACTIVITIES AS REPORTED BY SPECIALTY GOODS MANUFACTURERS ASSEMBLERS

(N = 52)

		Perceived Company Involvement in Personnel Activities	*Reported Effect of Personnel Administration Activities*	
Functions	*Personnel Administration Activities*	*1 2 3 4 5*	*Satisfaction* *1 2 3 4 5*	*Performance* *1 2 3 4 5*
Identifying	Human Resources Planning	3.5	3.8	3.8
	Job Description	4.5	4.2	4.3
Obtaining	Recruiting	3.8	3.9	4.0
	Selecting	3.2	4.0	4.1
Developing	Orientation	3.6	4.1	4.1
	Training	3.0	3.7	3.8
	Personnel Administration Communication	3.4	3.5	3.6
Retaining—Compensation	Wage and Salary	2.8	3.7	3.8
	Incentive Pay	3.3	3.7	3.8
	Profit Sharing/Stock Option	1.4	2.5	2.5
Retaining—Environment	Medical Insurance	4.2	3.9	3.9
	Medical Service	4.2	4.3	4.4
	Healthful Working Conditions	3.2	3.9	3.8
	Safe Working Conditions	3.6	4.0	4.1
	Food Service	2.9	3.3	3.2
	Recreation/Social Service	2.3	2.9	2.9
	Vacations/Holidays	3.5	4.0	4.0
Adjusting	Employee Counseling	2.0	2.8	2.8
	Suggestion System	3.2	3.2	3.3
	Promotions	3.3	3.1	3.2
	Transfers	3.5	3.7	3.8
	Layoffs	3.0	3.6	3.6
	Retirement	2.2	2.9	3.0
	Grievance Procedure	3.3	3.4	3.5
	Discipline	3	3.9	3.8
Measuring	Performance Appraisal	4.1	4.3	4.3
	Morale Surveys	3.1	3.6	3.6
	Personnel Administration Research	3.2	3.7	3.8
	Affirmative Action/EEO	4.0	3.9	4.0
Mean		3.3	3.6	3.7

Source: Survey conducted by the author.

ceived that the firm has been involved in a particular personnel activity at the level of 3.0 and their perception of the impact of that activity on their job performance is above 3.0, then the employees feel that the firm is receiving a positive result from their investment. If their perception of the impact of the activity on their performance is below 3.0, the employees have concluded that the firm has not received a full return for their investment.

For the employees from the three firms surveyed here, their satisfaction and perceived performance were greater than what they believed their firms had invested for the personnel activities of human resources planning, recruiting, selecting, incentive pay, food service, vacations and holidays, and morale surveys. From the employees' point of view, these were the most cost-effective personnel activities provided by their organizations. Bank employees reported satisfaction and performance results greater than the perceived amount invested by their firms for nine activities, the utility employees reported fourteen, and the specialty manufacturer employees reported twenty-four. The least return in satisfaction and performance for bank and utility employees was for affirmative action/EEO.

For seven activities, the respondents indicated they were highly satisfied and they believed that the activities had a highly positive effect on their performance, regardless of the level of employer involvement in that activity. These activities, which resulted in the most positive results (above 3.5) for all three companies were job description, training, wage and salary, medical insurance, safe working conditions, vacations and holidays, and transfers. Even minimal commitment by the firm in these activities resulted in highly positive reaction by the employees. Least positive results (below 2.5) were reported by the specialty employees for profit-sharing, where there was no profit-sharing program, and by the utility employees for food service, where the surveyed employees did not have convenient access to the cafeteria. Even in these few cases of negative response, however, the employees reported that the results for satisfaction and perceived job performance were nonetheless greater than their perception of the amount invested by their firms in those activities.

CONCLUSIONS AND IMPLICATIONS

For the three work units included in this study, the following conclusions about personnel administration activities can be drawn:

- Employees are aware of the personnel administration activities in their organizations and have a clear perception of the level of commitment their firm has in the various activities.
- The greater the amount of commitment by the firm in a particular personnel administration activity as perceived by the employees, the greater is the employees' satisfaction with that activity.
- The greater the amount of commitment by the firm in a particular personnel administration activity is perceived by the employees, the greater is the employees' perception that their job performance is positively influenced by the activity.
- As perceived by the employees, the most cost effective personnel activities provided by their employer were human resources planning, recruiting, selecting, incentive pay, food service, vacations and holidays, and morale surveys.
- As perceived by the employees, the most effective personnel activities for obtaining the highest level of job performance and satisfaction were job description, training, wage and salary, medical insurance, safe working conditions, vacations and holidays, and transfers.

The results presented here provide considerable guidance for management and the personnel department in the conduct of the personnel administration program. The study indicates that employees do indeed believe that the personnel administration program has a positive influence on their job performance and on their satisfaction.

Personnel administration is here to stay. Its programs are deeply institutionalized in our society and pressure to continue and increase them comes from government, labor unions, competition, employees, society as a whole, and even from management itself. It is management's responsibility to maximize organizational efficiency by assuring that the individual personnel activities and the total personnel program are administered in the most effective manner. However, most firms have little awareness of the value of their various personnel activities other than the need to have them in the attempt to attract and retain employees.

It can be valuable to survey employees to determine their awareness of, and their desire for existing personnel activities. Furthermore, the employees should be informed completely and continuously about the personnel program. From this study, for example, it was determined by actual organizational data that both the bank and the utility have rather extensive and sophisticated personnel programs. However, the bank employees evaluated their firm's level of involvement in their personnel program much higher than did the utility employees. For one thing, the bank is perceived by its employees as being more active in personnel administration communication. From the employees' point of view, the bank is doing a better job of informing them of what is available.

The firm should determine if there is an optimum mix of the various personnel activities. Given limited resources, the greatest proportion should go to those most likely to provide the firm with the greatest return. The bank is reported by its employees as emphasizing personnel activities that have a more direct and immediate impact on their personnel development to aid them in doing a better job and on their compensation to reward them for doing an effective job. The bank employees perceive that their firm is concentrating most on the developing function (orientation, training, and personnel administration communication).

The utility employees, in contrast, reported that their firm emphasizes primarily the personnel function of identifying (human resources planning and job description) followed by the retaining-environment function (medical insurance, medical service, healthful working conditions, safe working conditions, food service, recreation and social service, and vacations and holidays). The bank employees perceive that their firm is emphasizing activities that are more likely to have a direct effect on job performance and more direct rewards that are related to performance, while the utility employees perceive that their firm emphasizes activities that are less directly related to performance or immediate satisfaction.

Management needs to recognize that the characteristics of the employees themselves can affect their perceptions of, and reactions to, the personnel program. The utility company program overall is much superior to that of the specialty goods manufacturer in variety of activities and total investment, yet employees from both organizations report their awareness of the firm's total personnel program, on average, to be the same. Moreover, the specialty goods employees report a higher average satisfaction from their personnel program and a belief that the program has a more positive effect on their performance than do the utility employees. Both groups of employees reported approximately the same level of personnel administration communication provided by their firms.

The difference in impact could be explained in part by the fact that the utility employees are part of a large, profitable organization, and the workers themselves are skilled in their trade. The specialty employees work for a firm that has not been profitable for much of its history and has experienced occasional layoffs. The employees themselves are unskilled. Therefore, the expectations of the specialty employees could be much less than those of the utility employees. As a consequence, their appreciation for what they do receive could be much greater. Their satisfaction is greater and they believe they demonstrate their appreciation by greater effort.

The results of this study are positive and encouraging. Studies of this nature in every organization as a beginning effort, combined with increasing attention to the relationships between personnel administration and organizational effectiveness, can increase the likelihood that personnel administration is not just another major cost of the organization, but is truly an investment in organizational productivity.

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Credit Laws: Some Recent Changes

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In the past year, substantial changes have occurred in the American economic climate, which have particularly affected the extension of credit. Lenders want more in terms of interest, repayment terms, and the transfer of loans. Borrowers want greater access to credit, favorable interest and repayment terms, and a clear understanding of the contract. These two positions have been reviewed by state legislatures and federal agencies in the past year during consideration of laws and rules designed to benefit both lenders and borrowers in an economy that relies heavily on the extension of credit. The purpose of this article is to discuss the new federal and Arizona state laws passed within the past year and to consider recent case decisions and proposed laws that could affect both lenders and borrowers.

THE INTEREST RATE

The area of credit transactions most affected by economic fluctuations is probably the amount of interest charged. Because of fluctuations in the prime rate, mortgage rates, and other interest rates, state legislatures were forced to act quickly to bring the legal limits on interest rates in line with current commercial lending rates. The Arizona Legislature passed a law[1] in December, 1979, which changed virtually all the legal limits on interest charges. Later, in April 1980, two more laws[2] were passed that made still more changes in the interest laws. Both before and after these changes, interest rates varied according to the type of transaction involved. Each type of interest rate and the changes are discussed separately in the following sections.

Recent changes have occurred in laws relating to the extension of credit, particularly those that relate to the legal interest rate, usury, installment loans, auto loans, and retail credit.

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Legal Rate

Every state has set forth a rate of interest referred to as the legal rate, which is the amount of interest in a loan agreement if the people involved cannot agree on an interest rate. A classic example is a person who signs an IOU for $600 without providing for the interest rate. The legal rate of interest would be applied. In Arizona, before the changes last spring, the legal rate was 6 percent per year.[3] After the April changes, this amount was raised to 10 percent per year.

Traditionally, the legal rate of interest is lower than commercial and consumer rates. When the legal rate was changed from 4 percent to 6 percent in 1978, 6 percent was low but not unreasonable. With financial changes, the 10 percent is currently still low, but again, not generally considered unreasonable. It should be remembered that the parties are free to agree to a different interest rate and thereby prevent application of this section.

Directly related to the legal rate is the rate of interest to be paid on legal judgments. Once someone obtains a court judgment, interest accrues on the amount of that judgment until it is paid. Before the amendments, Arizona's legal judgment rate was 8 percent per year.[4] With the changes of 1980, a legal judgment rate no longer exists. The new section provides that the judgment rate be "specified in the judgment." The only restriction is that the rate provided in the judgment may not exceed the "maximum legal rate" (discussed later in this article). This is the first time that a specific rate has not been set forth in the laws. Two theories for the change could be advanced. One theory is that the legislature may have sought to bring judgment rates, which are usually lower than commercial rates, more in line with existing commercial interest rates. A second theory is that the legislature anticipated still further changes in interest rates and that this general language would not require reworking each interest law when economic changes occur.

It is relevant to note that in December, 1979, the legislature had passed a bill creating a new section which followed the legal and judgment rate section. This new section would have raised the legal rate to 12 percent after January 1, 1982. However, the 1980 legislation repealed this additional section and ended its short four-month life.

Usury and Excessive Rates

Originally, the law pertaining to usury and the charging of excessive interest[5] provided that if anyone contracted to receive, on a loan of money or goods, more than eight dollars per one hundred dollars per year, the rate was usurious, and as penalty, the party forfeited all interest on the loan. The courts were very strict in their enforcement of this original section. In *LaBarr v. Tombstone Terr. Mint,*[6] a group of five investors agreed to loan the sum of $300,000 to an Arizona businessman with the loan to be repaid in six monthly installments of $50,000 each. Interest on the note amounted to $30,000 and was payable in installments of $15,000 each. In addition, the borrower was to pay a "financier's fee" of $20,000, payable in two installments of $10,000 each. The note also provided that in case of default or late payment, additional interest of 2 percent per month would be charged. The business defaulted on the loan and the five investors sued to collect on the note. The investors asked the court to permit at least part of the usurious interest to be paid. However, the court stated that the loan was clear in its requirements that all interest be forfeited.[7] Violation of the usury law thus brought costly consequences to the lender.

Under the usury section as amended in April, the word *usury* was omitted from the section completely and the section was changed similarly to the judgment rate section. Under the change, a party forfeits interest if the amount of interest charged is more than the "maximum permitted by law." Again the change appears to be in anticipation of future economic changes and attempts to avoid the problem of amending every section as interest rates fluctuate.

Installment Loans

The next change was not a change in existing law, but was rather the creation of a new law dealing with installment loans and the appropriate interest rates.[8] This section was responsible for the most dramatic changes in permissible interest rates, providing not only for the appropriate rate, but also for the methods of computing interest. Summarizing, this new section provided the following:

- On installment loans of $5,000 or less, the interest rate may not exceed the rate provided in the contract. (This was a lift of the ceiling on interest rates; the maximum is now whatever the party wishes to charge.)
- Interest may be computed in one of two ways: (a) at a single annual percentage rate (based on the actuarial method); or (b) may be precomputed on the basis of the number amount and date of payments and then added to the loan amount.

Much of the section dealt with the problems of prepayment and involved substantial changes. For example, if the interest is precomputed and the loan is prepaid in full by cash or refinancing, the lender may collect only the earned interest and late fees, if any. Furthermore, the borrower is entitled to receive a rebate on the precomputed interest charges. A surprising change was that the amount of this rebate may *not* be computed by the "Rule of 78s," which is one method used to determine the borrower's rebate in the event of prepayment. Under the Rule of 78s, also referred to as a "sum of the digits" method, a debtor may end up paying more by paying early. For example, an individual borrows $1,500 with total interest or finance charges of $211.68 and agrees to repay this amount in twelve monthly installments. After six months, the borrower wishes to repay the full amount. The Rule of 78s is a method of determining how much interest or finance charge the lender has earned and how much belongs to the borrower. The rule operates in a manner similar to the method of depreciation based on sum-of-the-years-digits. The following is an explanation of how the rule would work in the example:

A consumer who prepays the balance of a $1,500 loan on August 1 (on the sixth of his twelve installments) is *not* entitled to rebate of one-half of the $122.68 precomputed finance charge since that person has had use of more than half of the principal during the first six months of the loan. The key fact is that the principal is constantly declining during the life of an installment loan. The Rule of 78s is based on the idea of a 12-month loan repayable in equal installments. A borrower who takes out a $1,200 loan has the use of twelve $100 bills the first month, eleven $100 bills the second month, ten the third month, and only one the last month. During the full twelve months, the person therefore has the use of seventy-eight $100 bills (12 plus 11 plus 10 . . . plus 1). The number 78 becomes the denominator of the fraction, while the numerator depends upon when the prepayment takes place. If prepayment is made at the seventh installment, 57/78 of the total finance charge has been earned by the creditor (the numerator is the sum of 12, 11, 10, 9, 8, and 7). In the consumer's case mentioned previously, this would amount to 57/78 of $211.68, or approximately $155. Therefore, the consumer's rebate due on August 1 would be approximately $57.[9]

In general terms, an 18 percent annual percentage rate loan prepaid in six months would result in an increased yield of 1.2 percent, and if prepaid in twenty-five months, an increase of .2390 percent. This new Arizona section prohibits the use of the Rule of 78s method and requires the lender to charge the debtor who wishes to repay the loan only the amount due at that time and also to rebate a portion of the interest charges.

Under the changes, the method of computing the rebate is based on a thirty-day month, a 360-day year or on the actual number of days left in the loan period. In comparison to the Rule of 78s then, this new formula would have a denominator of days and a numerator consisting of the day in the loan period on which the prepayment occurred. For example, on a five-year loan prepaid at the end of the second year, the denominator would be five times 360 or 1,800 and the numerator would be two times 360 or 720. Thus, using the same $1,500 loan with $211.68 in finance charges, the total finance charges earned would be 720/1800 of $211.68 or approximately $84.67, and the consumer's rebate would be $127.01. In this example the lender could also compute the rebate on the basis of thirty-day months each or could use 365 or 366 as the basis for the yearly computation. It should be noted, however, that installment loans consummated or refinanced prior to October 1, 1980 may still use the Rule of 78s for computing prepayment rebates.

This new section permits the lender to charge a late or delinquent fee and sets a maximum for such fees. If an installment is not paid within ten days of its due date, the lender may charge the lesser amount of 5 percent of the installment or ten dollars.

Part of this new law deals with credit card accounts or checking account credit lines granted by financial institutions — banks, trust companies, savings and loans, credit unions and small lenders.[10] The maximum interest rate that may be charged on this type of credit transaction is the amount stated in the contract. Financial institutions may charge the same delinquent penalty that may be charged on installment contracts.

One final portion of this new law permits the lender or financial institution to make additional charges to the borrower, which could include filing fees (in the event a lien or security interest is taken as collateral), escrow fees, notary fees, and title report fees. All installment contracts may include provisions for payment of court costs and attorney fees in the event of litigation to enforce the contract.

Motor Vehicle Installment Sales

Under previous laws, installment contracts for the purchase of motor vehicles were covered separately under the Motor Vehicle Time Sales Disclosure Act, which included provisions for the contract terms, the finance charges and insurance charges. For example, one section dictated the maximum finance charges that were permitted in a motor vehicle purchase loan.[11] Loans on motor vehicles one year old or less could carry a maximum rate of eight dollars per hundred per year. Loans on motor vehicles older than one year could have a maximum rate of twelve dollars per hundred.

The major changes in this Motor Vehicle Act pertained to interest charges. Quite simply, the legislature repealed the section on installment loans in the Motor Vehicle Act so that the maximum amount that can be charged on a vehicle loan is the amount provided in the contract. Furthermore, the Rule of 78s cannot be used as a method of computing prepayment rebates, but rather the method for general installment sales contract must be used. The language in the motor vehicle section is identical to that of the installment sales section with the exception that in the Motor Vehicle Act, there is a provision that permits and sets procedures for the transfer of motor vehicle loan contracts, which differ from other installment loan contracts.

One additional fundamental change occurred in the section dealing with refinancing a motor vehicle installment contract. Originally, this section provided for refinancing based on the time-price differential, which is a method of charging interest on a contract but which has traditionally been higher than the legal or maximum interest rate. The name of the time-price differential explains its purpose. A seller of goods was entitled to a certain amount of money for accepting payments received for an item over a period of time, and also was entitled to receive additional payment for the expenses of collection, default or repossession. These charges were not called "interest" and because of the label, sellers were able to collect more in their contracts than was obtainable by a lender in a straight loan of money.

Because the Motor Vehicle Act was amended to provide for a finance charge "set forth in the contract," the term "time-price differential" is no longer used and hence was eliminated from the refinancing section. The refinancing section now provides that the refinancing charge will be based upon the rate set forth in the contract.

Retail Installment Sales Transactions

The final change in the new interest rates was brought about by the addition of laws specifically governing retail installment contracts. "Retail installment contracts" are defined in this new legislation as any retail installment contract except charge accounts, and includes chattel mortgages (mortgages or liens on personal property) and security agreements. The sections cover any transaction in which a retail buyer purchases goods or services from a retail seller through the use of a retail installment contract.

The maximum interest that may be charged in a retail installment transaction is the amount provided for in the contract. It may be computed on the actuarial method or precomputed as if all payments will be made on the dates scheduled. The actuarial method provides that when no payment is made, or the payment is insufficient, the unpaid amount of the finance charge is added to the amount financed, and the borrower continues to compound interest upon interest. On the precomputed method, unpaid interest is accumulated and not capitalized. The precomputed method will result in a slightly smaller finance charge.[12]

If there is a prepayment of the amount financed, the borrower's rebate may not be computed pursuant to the Rule of 78s, but is computed in the same manner as the general installment contract. Late charges and default costs are also the same as for installment loans. Again, these new laws do not apply to contracts entered into before October, 1980.

Retail installment contracts may be transferred, but the new holder of the contract must notify the buyer of the transfer, or the buyer may properly continue making payments to the original seller. Also under this new section, the seller is required to furnish the buyer with periodic statements. Those periodic statements may be based on a calendar month billing period or upon a similar monthly billing period established by the seller. The periodic statement must be sent within fifteen days from the close of the billing cycle. The penalty for violation of any of the provisions relating to retail installment statutes is the forfeiture of the finance charges.

THE LEGISLATIVE HISTORY

Before these final credit provisions were passed, the legislature made two or three changes in each section. For example, at one point there was a specific provision dealing with real estate mortgages that was repealed within a month of passage. In addition, the original retail installment and motor vehicle contracts carried specific maximum rates rather than the general provision permitting the parties to agree to an amount of finance charge.

There is still need for clarification of some of the provisions. For example, it is not clear which section governs credit card transactions, other than those from financial institutions. The need for clarification may have resulted from the haste in which the statutes were enacted because of the economic climate. Future sessions of the legislature may bring still further changes in the already modified credit laws.

The National Changes — Holder in Due Course Doctrine

The significant changes in Arizona's interest rates were typical of the dramatic changes occurring in other states. However, the federal government also made changes in credit transactions, the most significant of which related to the transferability of credit contracts and the rights of transferees of such contracts. The rule governing such transferability is referred to as the "Holder in Due Course Doctrine." This rule and its changes were promulgated by the Federal Trade Commission (FTC).

The Holder in Due Course Doctrine deals specifically with special types of contracts — commercial paper. Commercial paper, in its many forms, takes the place of cash in our modern economy. For example, a consumer is likely to pay for a large purchase by signing a check or a promissory note, both of which are forms of commercial paper. If the consumer executes a promissory note separate from the sales agreement, the seller then may discount (sell) the instrument to a lender. If the lender takes the instrument in good faith, for value (by paying for it), prior to maturity, and without any defects in the instrument or its creation, the lender achieves the special status as a "holder in due course." A holder in due course enjoys the greatest protection possible as a new holder of the contract. This protection is provided in order to achieve liquidity and confidence in the commercial paper market. A holder in due course is not required to look behind the initial obligation to determine whether any problems might exist. It was felt that to require them to do so would defeat the economic viability of treating commercial paper as cash equivalent. Thus, even though the product may have been defective, or the seller may have intentionally misrepresented the product or unjustifiably refused service or repair as promised, the lender (contract holder) could still demand payment. The consumer, however, would have to look to the seller for relief. The effect was that the consumer's duty to pay the lender was separated from the seller's reciprocal contractual obligations.

Although only in piecemeal fashion, the courts began preserving some of the consumer's personal claims and defenses against the holder of the paper on the theory that the holder did not take the instrument in good faith. Reasons advanced for the lack of good faith contention included the sale of the note at a considerable discount, the holder's knowledge of many complaints against the seller, or close connections between the seller and the holder. Thus, a consumer would not have to pay if the new contract holder knew of a salesman's unethical tactics or if the contract was bought for an unreasonably low price.

It was not until 1976, when the Federal Trade Commission passed the Federal Holder in Due Course Doctrine[13] however, that consumers were protected from the holder in due course defenses. The FTC regulation generally provided that finance companies in consumer credit transactions purchased notes subject to all consumer claims and defenses against the seller of the goods or services. The effect of the regulation was the elimination of the Holder in Due Course Doctrine in most consumer credit transactions.

One original FTC requirement was that the following language be included in any consumer credit contracts in ten-point boldface type:

> *NOTICE*
>
> Any holder of this consumer credit contract is subject to all claims and defenses which the debtor could assert against the seller of goods or services obtained pursuant hereto or with the proceeds hereof. Recovery hereunder by the debtor shall not exceed amounts paid by the debtor hereunder.

One glance at the above should convince the reader that very few people understood their rights. That language has now been changed to read:

> This credit transaction finances a purchase. All legal rights which the buyer has against the seller arising out of this transaction, including all claims and defenses, are also valid against the holder of this contract. The right to recover money from the holder under this provision is limited to the amount paid by the buyer under this contract.
>
> A claim is a legally valid reason for suing the seller. A defense is a legally valid reason for not paying the seller. A holder is anyone trying to collect for the purchase.

The remaining changes are intended to make the provision more understandable by consumers without changing its legal significance. The new rule also states that where required by law, the above provision must be written in Spanish. The term "notice" is deleted from the new language to clarify that the language is not merely informational but must be included in contracts as a legally binding obligation. Because of the original Holder in Due Course Doctrine, the lender's risk is being increased in the event of the seller's misconduct. To minimize the risk, the lender has a vested interest in refusing to buy a paper from a merchant who has not demonstrated his ability to stand behind his merchandise. The lender will want to investigate merchants with which he will become affiliated.

Penalties for failure to include this notice provision are found in Section 5 of the FTC Act under which consumers may recover damages from the violating seller. The notice provision protects the consumer and the section allows the consumer to act as an enforcer.

The Arizona modification of the interest statutes reflects a desire on the part of the legislature to change with a fluctuating economy. The amendments to the Holder in Due Course Doctrine illustrate trends toward consumer protection and the readability of contracts. Both trends demonstrate the need for lenders to review legislative and administrative changes frequently in order to comply with the law. Lenders must also realize that increased costs may result from this updating procedure and also from the changes themselves if new contracts and forms are to be printed. The area of credit is one that is frequently and drastically changed. Recent modifications indicate that the pattern will continue.

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[1] House Bill 2020

[2] Senate Bills 1352 and 1341

[3] A.R.S. 44-1201A

[4] A.R.S. 44-1201B

[5] A.R.S. 44-1202

[6] 119 Arizona 283, 580 p. 2d 744 (1978)

[7] A.R.S. 44-1202

[8] A.R.S. 44-1205

[9] 12 C.F.R. § 226

[10] A financial institution is not defined in this section, but rather the law relies on the definition from the banking law section (A.R.S. 6-101).

[11] A.R.S. 44-291

[12] These methods of computing finance charges are also applicable in the general installment contract section and in the Motor Vehicle Installment Contract Act.

[13] 16 C.F.R., Sec. 433.9

Phoenix Family Budget: 1980

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In 1980 a hypothetical Phoenix area family of four required $24,402 to maintain a moderate standard of living. This figure represents a 9.1 percent increase over the adjusted 1979 budget level. These numbers are the result of a study conducted by the Bureau of Business and Economic Research, College of Business Administration, at Arizona State University. The study was done in cosponsorship with Valley National Bank. Items in the budget, based on consumption patterns determined by the United States Bureau of Labor Statistics (BLS), are directly priced during the fourth quarter each year.

The Phoenix Family of Four Budget study is based on the methodology developed by the Bureau of Labor Statistics as described in Bulletins 1570-1 and 1570-3 (Autumn, 1966). Products in the budget, specifications describing each item, and quantities allowed were set by the BLS, based on consumer expenditure surveys done in 1963. These surveys showed the goods and services that families were actually purchasing at the time. The contents of the budget provided for a lifestyle described as moderate and included the number of children, maintenance of health and social well-being along with participation in community activities. The budget does not reflect actual average expenditures of a family of four, but instead represents "the collective judgment of families as to what is necessary and desirable to meet the conventional and social as well as physical needs of families of the budget type."[1]

The budget figures are determined for a very specific family of four described as typical of urban center United States families in 1963. Its members include a 38-year-old husband employed full time, a wife not employed outside of the home, a 13-year-old son, and an 8-year-old daughter. The family is assumed to be well established in the community and in good health. The couple has been married fifteen years and the husband is an experienced worker in his field. The family has accumulated an average inventory of home furnishings, clothing, major durables, and other items. Three-fourths of the described families are considered homeowners with mortgage payments on a house they purchased eight years earlier. The remaining one-fourth are renters. This ratio corresponds with current information regarding Phoenix's homeowner-renter ratio.[2]

Specifications in the study, along with the weights applied to the goods and services, have not been revised

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Taxes, Medical Care, Personal Care, and Transportation accounted for the largest percentage increases in the Urban Family of Four Budget. The budget reflects a 9.1 percent increase over the revised 1979 budget for an urban family of four.

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and continue to be based on the needs of the early 1960s family. As a result they do not necessarily reflect the needs or desires of a current family of four. Today's families would generally change their consumption patterns to some extent to respond to the fluctuation of prices and available commodities. Consumers normally substitute lower priced goods and services for those that have had rapid price increases. Such substitutions are not included in this budget.

Since consumption changes are not considered, the Urban Family of Four Budget (UFFB) is most useful in determining the change in prices of certain nearly identical goods from year to year in the Phoenix Metropolitan area. These increases and decreases in price may be more valuable than the dollar figures cited for actual living costs.

Phoenix is ***not*** one of the urban centers on which the Bureau of Labor Statistics keeps Family of Four or Consumer Price Index data. To fill this void, the Bureau of Business and Economic Research has produced the Urban Family of Four Budget study since 1969. The study is done according to the original specifications: Data is collected by direct pricing of approximately 400 consumer goods and services. The BLS, on the other hand, direct priced for the *last* time in 1969. The current figures for other cities are determined by updating the 1969 direct prices by components of the Consumer Price Index. Due to the difference in methodology, the figures cited in the Metropolitan Phoenix study *cannot be compared* accurately to those issued by the BLS for other cities. The Phoenix study can *only* be compared with that done in Tucson by the Division of Economic and Business Research, College of Business and Public Administration, University of Arizona since their methodology is comparable. The results of a revision of this study to allow comparison of the Phoenix data to that of the cities prepared by the BLS will be released soon.

FAMILY OF FOUR BUDGET COSTS

A hypothetical Phoenix family of four required $24,402 to maintain a moderate standard of living in 1980. This budget reflects a 9.1 percent increase over the revised 1979 budget for the same family unit. The categories having the largest relative increase in prices in 1980 are taxes (14.7 percent), medical care (14.2 percent), personal care (13.3 percent), and transportation (12.4 percent). Each of these categories also had substantial price increases in 1979. Table 1 details a comparison of all the major categories of the Phoenix area budgets for 1979 and 1980. A breakdown of the major areas into significant subcategories is necessary in order to analyze the budget information and explain the percentage changes that occurred.

TABLE 1

PHOENIX FAMILY OF FOUR BUDGET COSTS AND PERCENTAGE CHANGES, 1979-1980

	1980	*1979 (Revised)*	*Percent Changes*
Total Budget	$24,402	$22,362	9.1
Total Family Consumption	18,167	16,858	7.8
Food	5,756	5,274	9.1
Housing	5,374	5,217	3.0
Transportation	2,474	2,200	12.4
Clothing	1,514	1,465	3.3
Personal Care	630	556	13.3
Medical Care	1,409	1,234	14.2
Other Family Consumption[a]	1,010	912	10.7
Other Costs[b]	868	823	5.5
Taxes	5,367	4,681	14.7
Social Security	1,496	1,371	9.1
Federal Income Tax	3,326	2,811	18.3
State Income Tax	545	499	9.2

[a] Other Family Consumption includes reading, recreation, educational supplies, tobacco, alcoholic beverages, and miscellaneous expenses.

[b] Other Costs include life insurance premiums, occupational expenses, and gifts and contributions.

Note: Details may not add to totals due to rounding.

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University in cosponsorship with Valley National Bank.

Total Family Consumption

The Food category is the major component of the total budget with 23.6 percent allocated to food expenses, which are subdivided into two main areas--food at home and food away from home. Food at home rose 10.7 percent while food away from home, which includes school lunches, rose 6.8 percent. The smaller increase in the latter category, coupled with a reduction in state sales tax on food items from 4 percent to 0 percent as of July 1, 1980 led to an overall increase of only 9.1 percent in food costs.

Housing expenditures also represent a significant portion of the family budget with 22.0 percent allocated to housing costs. The BLS methodology considers that 25 percent of the families are renters and 75 percent are homeowners. Renter costs are comprised of monthly rent for an unfurnished three bedroom apartment or single family dwelling, utility costs, kitchen appliances, and insurance for household contents. Homeowner shelter costs include mortgage and principal for a home purchased eight years ago, (1972 in this year's study), property tax, utilities, repairs, kitchen appliances and household insurance.

Based on a survey of over 1,100 renter dwellings in the Phoenix area an increase in rent of only 1.0 percent occurred between 1979 and 1980. The average rent in this survey was $406 per month, compared to an average principal and interest payment of $169 per month on a 1972 mortgage. Utilities rose 5.3 percent and kitchen appliances increased 3.4 percent for renter families. This results in a total increase in renter costs of 1.5 percent.

Principle and interest payments on a home increased only 4.1 percent in the years 1971 to 1972 because mortgage interest costs remained stable following the recession of 1970. The average mortgage interest rate was 7.5 percent in 1971 and 7.25 percent in 1972. Additional 1980 homeowner costs included utilities, which rose 6.7 percent, household insurance, which increased 11.8 percent, and property taxes, which decreased 18.0 percent. Thus despite moderate increases in some housing costs in 1980 the total rise was only 3 percent due to the heavier weighting of items with minimal increases or decreases.

Transportation costs (10.1 percent of the total budget) were characterized by a number of substantial increases. Gasoline prices rose 16.2 percent, tire prices increased 16.9 percent, and public transportation costs jumped 4.0 percent. Total repair costs showed a 7.7 percent increase while total operating expenses rose 12.6 percent. Overall in 1980, automobile maintenance cost the family of four 10.4 percent more than the previous year.

Clothing cost increases for 1980 were a moderate 3.3 percent. This can be attributed in part to the unusual number of preholiday sales in the fourth quarter, the time during which prices were gathered, and to a decrease of 3.3 percent in women's clothing, the category which makes up the largest percent of the total family clothing budget.

Personal care, which includes items such as haircuts, toiletries, and paper goods, usually increases in price substantially each year. These goods increased an average of 13.3 percent in 1980.

Medical care, a category which includes hospital-surgical insurance, medical, dental, and optical services and goods, and prescription and nonprescription drugs, makes up 5.8 percent of the total budget. This category's increase is primarily due to an increase in hospital-surgical insurance of 24 percent and a 30.7 percent jump in prescription drugs. Increases of almost 10 percent in every other subcategory contributed to the overall rise in medical care.

The last category under Total Family Consumption is Other Family Consumption and includes reading, recreation, educational supplies, tobacco, alcoholic beverages, and miscellaneous expenses. As in 1979 Other Family Consumption comprised 4.1 percent of the total family budget. The total costs in this category increased 10.7 percent.

Other Costs

Other costs is a separate subgroup and is not considered under Total Family Consumption. This category includes life insurance premiums, occupational expenses, and gifts and contributions. Other Costs increased by 5.5 percent in the past year.

Taxes

Total taxes for the urban family include social security, federal income tax, and state income tax. In 1980 social security rates remained at 6.13 percent while the wage base rose to $25,900. As a result, the family of four paid social security tax on every dollar they made. Federal income taxes were up 18.3 percent over the 1979 figures. This increase occurs because the hypothetical family consistently moves into a higher tax bracket as their income increases. On the other hand state income taxes increased only 9.2 percent due to the 8 percent flat rate on all Arizona adjusted income over $12,000. An additional state tax deduction for renters in the form of the renter's property tax factor also contributed to keeping state taxes lower.

Figures I through VIII demonstrate the twelve-year trend for the Phoenix area budget categories.

DISTRIBUTION OF EXPENDITURES

Figure IX depicts the percentage of the total budget allocated to each major category. The proportions of most items remained essentially the same as in 1979 with the exception of housing, which dropped from 23.3 percent of the budget in 1979 to 22.0 percent in 1980; and federal taxes, which increased from 20.9 percent of the total budget in 1979 to 22 percent in 1980. Food, housing, and taxes comprise over two-thirds of this hypothetical family's total budget.

FIGURE I
TOTAL BUDGET
(Metropolitan Phoenix)

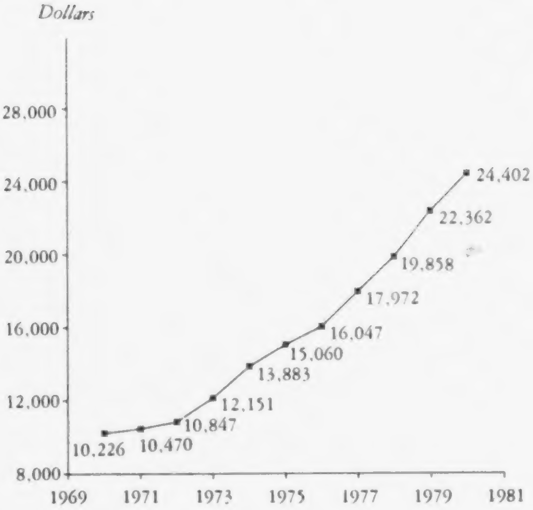


FIGURE II
FOOD
(Metropolitan Phoenix)

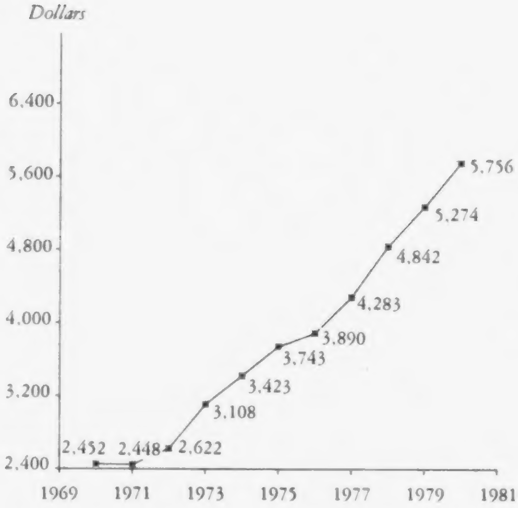


FIGURE III
HOUSING
(Metropolitan Phoenix)

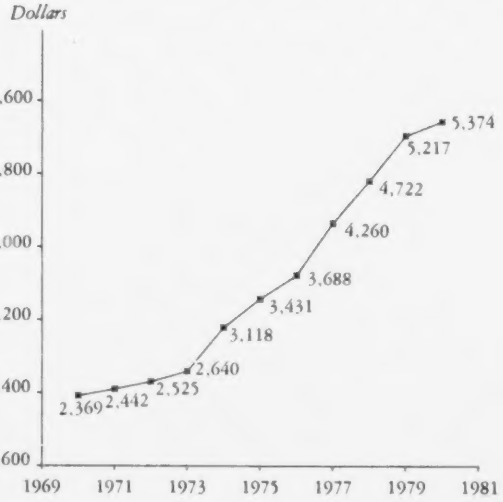
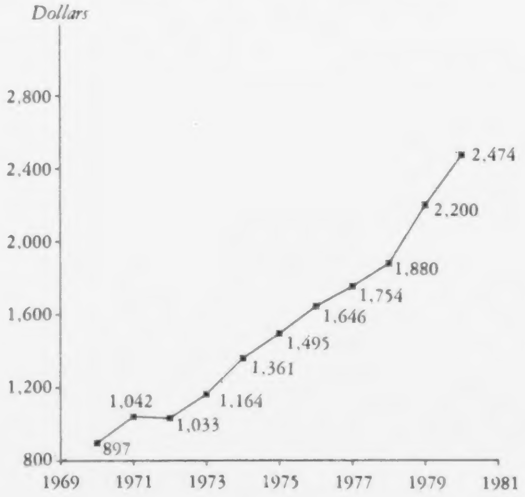


FIGURE IV
TRANSPORTATION
(Metropolitan Phoenix)



Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cosponsorship with Valley National Bank.

FIGURE V
CLOTHING AND PERSONAL CARE
(Metropolitan Phoenix)

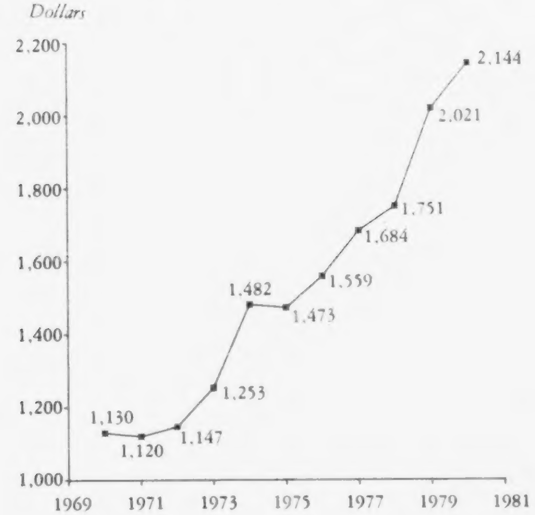


FIGURE VI
MEDICAL CARE
(Metropolitan Phoenix)

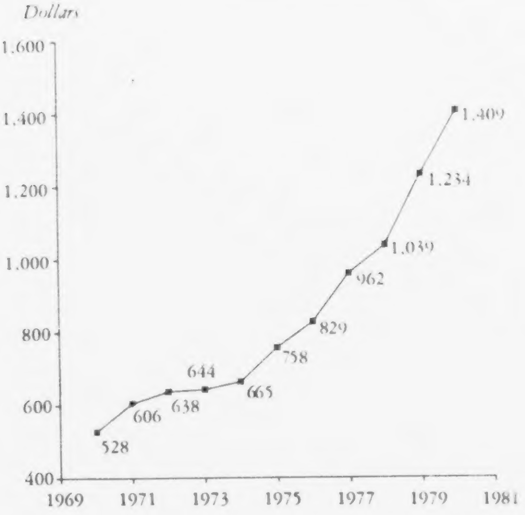


FIGURE VII
OTHER FAMILY CONSUMPTION
Alcoholic Beverages, Tobacco Products,
Reading & Recreation
(Metropolitan Phoenix)

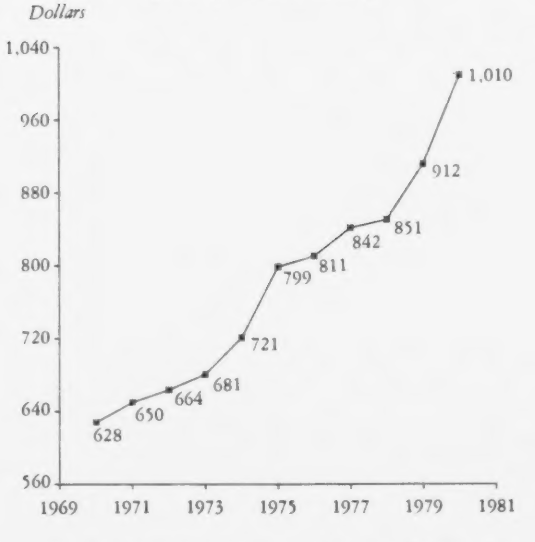
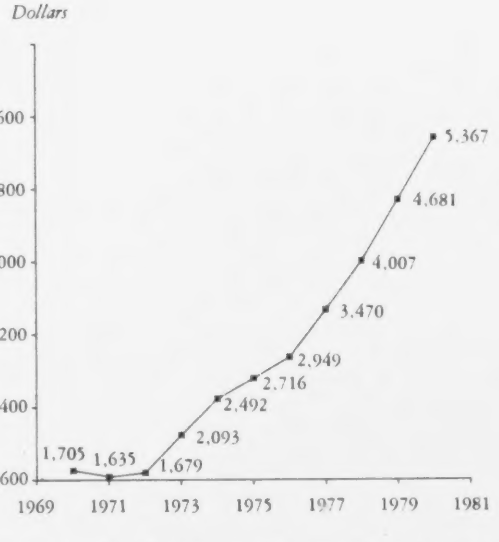


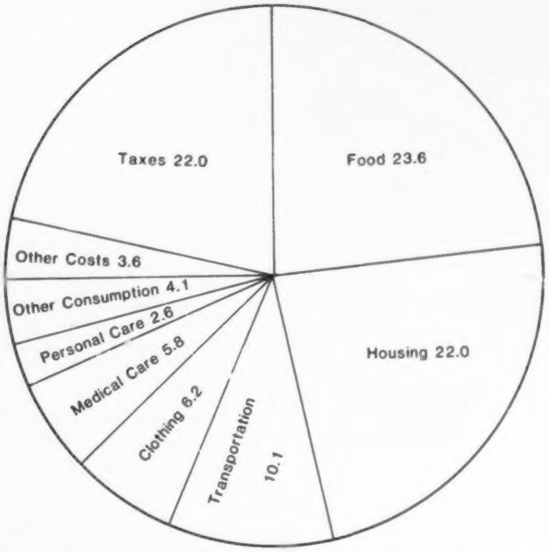
FIGURE VIII
TAXES
(Metropolitan Phoenix)



Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cosponsorship with Valley National Bank.

FIGURE IX

PHOENIX FAMILY OF FOUR BUDGET
Percentage Distribution of Expenditures
(Autumn, 1980)



Source: Bureau of Business and Economic Research, Arizona State University, College of Business Administration, in cosponsorship with Valley National Bank.

COMPARISON WITH TUCSON

Phoenix and Tucson are the two major metropolitan areas in Arizona accounting for three-fourths of the state's population. As mentioned earlier, the Tucson area family of four data can be compared to the Phoenix data due to similarities in methodology. Table 2 provides a comparison of the major areas for the Phoenix and Tucson UFFB. In viewing housing costs it is important to note that Tucson used a 7-year-old mortgage (1973) as compared to Phoenix's 8-year-old mortgage (1972). Overall, the budget for Phoenix is 4 percent higher than that of Tucson. This can be compared with a 5.3 percent higher cost for Phoenix in 1979.

SUMMARY AND FORECAST

The increase in the cost of living for a hypothetical Phoenix family fell from 13.6 percent in 1979 to 9.1 percent in 1980. This increase is substantially less than the increases in the Metropolitan Phoenix Consumer Price Index (CPI) from the fourth quarter of 1979 to the fourth quarter of 1980 (13.3 percent). This difference is largely explained by the differences in methodology in the computation of housing costs in the CPI and the UFFB. The UFFB measures changes in home purchase and mortgage interest costs that were included in the CPI eight years ago. There are, of course, numerous other differences in methodology between the two studies.

Given current predictions for the inflation rate in 1981, the increase in costs of most items of the UFFB will likely be at approximately the same rate in 1981 as in 1980. Homeownership costs in the UFFB, however, will probably increase more rapidly in 1981 because mortgage costs increased more rapidly in 1973 than in 1972, the year of the home purchase.

TABLE 2

COMPARISON OF FAMILY BUDGETS:
PHOENIX AND TUCSON, 1980

	(Urban Family of Four)	
	Phoenix	*Tucson*
Total Budget	$24,402	$23,462
Total Family Consumption	18,167	17,693
Food	5,756	5,322
Housing	5,374	5,661
Transportation	2.474	2,302
Clothing	1,514	1,559
Personal Care	630	547
Medical Care	1,409	1,246
Other Family Consumption[a]	1,010	1,056
Other Costs[b]	868	852
Taxes	5,367	4,917
Social Security	1,496	1,438
Federal Income Tax	3,326	2,988
State Income Tax	545	491

[a] Other Family Consumption includes reading, recreation, educational supplies, tobacco, alcoholic beverages and miscellaneous expenses.

[b] Other Costs include life insurance premiums, occupational expenses, and gifts and contributions.

Source: Phoenix data compiled by the Bureau of Business and Economic Research at Arizona State University in cosponsorship with Valley National Bank. Tucson data compiled by the University of Arizona's Division of Economic and Business Research in cosponsorship with Valley National Bank.

The Arizona Business Scene

1912

Consumer Prices in Arizona: A History and Comparison to the Nation

The Consumer Price Index (CPI) measures price changes in a sample of items that represent nearly all items purchased by the typical consumer. In the Metropolitan Phoenix CPI, prices are currently collected on 1,523 items, which comprise the All Items index, from which the inflation rate is derived.

These 1,523 items are subdivided into seven major groups: Food and Beverages; Housing; Apparel and Upkeep; Transportation; Medical Care; Entertainment; Other Goods and Services. The weights of these seven groups add to 100 percent, as shown in Table 1. These groups are subdivided into a number of categories. *Food,* for example, is subdivided into Food at Home and Food Away from Home. These categories are then further subdivided into subcategories, such as Cereals and Bakery Products, which are comprised of the individual items.

TABLE 1

WEIGHTS OF MAJOR CPI GROUPS, METROPOLITAN PHOENIX

Group	*Percent*
Food and Beverages	17.4
Housing	46.3
Apparel and Upkeep	5.3
Transportation	17.7
Medical Care	5.4
Entertainment	4.3
Other Goods and Services	3.6
Total	100.0

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University.

A history of the rates of inflation in Phoenix and in the United States as a whole is presented in Table 2. Since the late 1960s, the rate of inflation has been increasing in both Phoenix and the United States, although it follows a cyclical pattern that is tied to the national economy. The inflation rate generally peaks at the beginning of a recession, as in 1970, 1974, and

TABLE 2

RATES OF INFLATION 1970-1980
CONSUMER PRICE INDEX, ALL ITEMS
(Percentage Increase,
Measured from Year-end to Year-end)

Year	*Metropolitan Phoenix*	*United States*
1970	4.2	5.5
1971	5.2	3.4
1972	2.3	3.4
1973	7.8	8.8
1974	8.2	12.2
1975	8.4	7.0
1976	4.0	4.8
1977	8.6	6.8
1978	11.5	9.0
1979	15.8	13.3
1980	13.3	12.4

Source: Phoenix: Bureau of Business and Economic Research, College of Business Administration, Arizona State University. United States: U.S. Department of Labor, Bureau of Labor Statistics.

again in early 1980. The rate of inflation then generally drops until about one to two years after the end of the recession, as in 1971-1972 and 1976.

As can be seen from Table 2, the rate of inflation in Phoenix does not follow this pattern perfectly, as the inflation rate in Phoenix has been sometimes higher and sometimes lower than the national rate. Although the rate of increase in Phoenix has been higher than the national average for the last four years, the reverse relationship was true in five of the previous seven years. It should be noted that the CPI is *not* a cost of living index, although it is commonly mislabeled as such. It cannot be used to compare *prices* in different areas but can only be used to compare *changes* in prices.

Housing is the most important of the seven major groups of the CPI with a weight of 46.3 percent, meaning that the average consumer uses 46.3 percent of his expenditures, net of taxes, on housing-related costs. Housing costs were discussed in the April, 1981, "Arizona Business Scene."

The next most important group of the CPI is *Transportation*, accounting for 17.7 percent of the CPI. *Transportation* costs consist of two subgroups, private transportation (expenses relating primarily to automobiles) and public transportation (such as airline fares and bus fares). The inflation in various transportation costs in Phoenix and across the United States, for both 1980 and the entire period from 1969 through 1980, is included in Table 3. Transportation costs have increased more rapidly in Phoenix than the national average since 1969, the first year of the Metropolitan Phoenix CPI (148.4 percent compared to 126.6 percent). This increase has been somewhat more rapid than that of the overall CPI. Gasoline prices have been the major contributor to the inflation in private transportation in recent years, jumping 78 percent in Phoenix in the last two years, which is comparable to the national increase. In contrast, the increase in auto prices has been less than that of most items of the CPI since 1969. While new car prices have increased more in Phoenix than in the nation during the past two years, used car prices in Phoenix have decreased over that time.

Public transportation costs have increased rapidly in Phoenix in recent years. Since 1969, these increases have been greater than both the national average for public transportation and the All Items Metropolitan Phoenix inflation rate. Airline fares in particular have risen rapidly in the last two years — by 71 percent in Phoenix and 73 percent across the nation.

The next most important major group of the CPI is *Food*, with a weight of 17.4 percent of the CPI. Included in this group are both Food at Home costs (grocery items) and Food Away from Home costs (restaurant items). Food costs in Phoenix compare favorably to the United States average over the last eleven years, with the increase in Phoenix slightly less than the overall rate of inflation. The grocery items that have increased the most in these eleven years have been those in the Other Foods group: sugar and sweets, fats and oils, nonalcoholic beverages, and other prepared foods. The slowest price rises have been in dairy products.

The four other major categories of the CPI have weights much less than those of the groups already discussed. *Medical Care* expenses, comprising 5.4 percent of the Metropolitan Phoenix CPI, have increased at a much more rapid rate than the national average since 1969, the largest boost of any of the seven major groups. Much of this increase occurred in 1970 and 1971, as illustrated in Table 4. *Medical Care* consists of drugs (prescription and nonprescription), professional (physician and dental) services, and other expenses, including hospital services and health insurance. One of the major contributors to the increase in medical care costs is the cost of a hospital room, which has approximately quadrupled in price in the last eleven years.

Apparel and Upkeep has a weight of 5.3 percent in the Metropolitan Phoenix CPI. This group has had the smallest increase of any major group of the CPI since 1969, both in Phoenix and across the country.

Entertainment expenditures comprise 4.3 percent of the local CPI. Price increases in this group have been less than the All Items inflation rate since 1969, both in Phoenix and in the rest of the nation. The increase of 20.6 percent in Phoenix in 1980 was partially offset by the modest 2.8 percent rise in 1979.

Other Goods and Services, including personal care, make up the last 3.6 percent of the local CPI. Increases in these items in Phoenix have been greater than the national increases, although these price rises have been less than those of the overall CPI.

Price increases in most items of the Metropolitan Phoenix CPI have shown an inconsistent pattern over the years, as large increases in one year are typically offset by small increases or decreases in other years. The groups with the largest increases since 1969 include *Medical Care*, due largely to hospital related expenses; *Transportation*, reflecting increases in gasoline prices and the cost of public transportation; and *Homeownership* costs, mainly due to the increase in mortgage interest. Several groups of items have increased at relatively slow rates: *Apparel and Upkeep*, residential rent, and household furnishings and operations. The

TABLE 3

COMPARISON OF METROPOLITAN PHOENIX AND UNITED STATES RATES OF INFLATION

(Measured from Year-end to Year-end)

	Percent Change 1980		*Percent Change 1969-1980*	
Group	*Phoenix*	*U.S.*	*Phoenix*	*U.S.*
ALL ITEMS	13.3	12.4	134.0	124.3
Food	12.4	10.1	125.0	141.1
Food at Home	11.1	10.6	135.7	142.6
Cereals and Bakery Products	10.5	11.6	127.4	137.8
Meats, Poultry, Fish and Eggs	9.5	8.6	133.5	135.2
Dairy Products	8.9	9.7	110.2	114.0
Fruits and Vegetables	12.5	11.0	131.2	160.0
Other Foods at Home	12.8	12.9	159.7	176.4
Food Away from Home	15.6	9.6	103.4	136.3
Apparel and Upkeep	3.0	6.8	74.5	57.7
Men's and Boys' Apparel	3.6	5.4	50.6	48.2
Women's and Girls' Apparel	(3.6)	1.8	59.4	33.5
Footwear	(4.4)	6.7	101.4	68.8
Apparel Services	18.7	12.4	N/A	N/A
Transportation	13.1	14.7	148.4	126.6
Private Transportation	12.2	14.0	145.4	122.9
New Cars	16.8	7.5	N/A	56.5
Used Cars	(5.1)	18.3	N/A	109.7
Gasoline	20.0	18.9	N/A	247.3
Vehicle Maintenance and Repairs	13.9	10.9	N/A	N/A
Vehicle Insurance	19.8	7.3	N/A	N/A
Public Transportation	28.4	25.6	199.6	119.9
Airline Fare	29.7	33.4	N/A	N/A
Medical Care	11.3	10.0	217.3	132.7
Professional Services	11.9	10.9	N/A	N/A
Hospital and Other Medical Services	22.5	14.5	N/A	N/A
Health Insurance	7.7	N/A	N/A	N/A
Entertainment	20.6	9.6	102.2	90.1
Sporting Goods and Equipment	15.3	9.5	N/A	N/A
Toys, Hobbies	17.1	10.2	N/A	N/A
Admissions and Fees	28.6	8.7	N/A	N/A
Other Goods and Services	11.9	10.1	126.2	96.7
Personal Care	11.8	8.8	122.2	96.9

Notes: Housing items were discussed in a previous "Arizona Business Scene." This table is not inclusive of all subcategories within each group.

N/A — Not Available.

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University in cosponsorship with Valley National Bank; U.S. Department of Labor, Bureau of Labor Statistics, from selected issues of *CPI Detailed Report.*

TABLE 4

RATES OF INFLATION, 1970-1980
METROPOLITAN PHOENIX CONSUMER PRICE INDEX

Year	*Food*	*Housing*	*Apparel and Upkeep*	*Transportation*	*Medical Care*	*Entertainment*	*Personal Care*
1970	2.3	1.2	5.6	3.6	33.2	(1.3)	9.1
1971	1.1	2.7	(0.8)	16.6	16.8	14.9	(2.8)
1972	5.2	0.9	1.9	(0.7)	5.5	1.0	4.2
1973	16.2	5.8	7.2	12.5	0.7	0.7	8.7
1974	9.7	9.5	8.1	4.7	3.5	9.0	15.4
1975	8.9	9.6	4.9	4.6	15.3	5.1	2.9
1976	(0.6)	5.2	5.6	6.5	9.2	5.4	7.2
1977	10.1	7.7	8.1	8.3	7.0	6.2	7.9
1978	11.3	11.5	7.7	9.6	8.8	10.4	11.2
1979	8.9	19.2	7.4	11.9	11.4	2.8	10.2
1980	12.4	14.4	3.0	13.1	11.3	20.6	11.8

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University.

current prices of these goods and services are less than double the 1969 prices, whereas most current prices are at least two and a third times the 1969 prices.

Price changes in Phoenix have been considerably different from those across the rest of the nation for certain items. Phoenix has had a slower rate of increase in fuel and utility costs, restaurant expenses, and certain grocery costs. Phoenix, however, has had a faster rate of increase in transportation expenses, particularly public transportation, in medical care, and in personal care and other goods and services.

The inflation rate in the spring of 1981 was somewhat less than the peak inflation rate of early 1980. Inflation generally does decrease after a recession, usually not reaching its lowest rate until one or two years after the end of a recession. If this behavior continues in the current economic cycle, the inflation rate will continue to drop until sometime in early 1982. History suggests that the level would drop to as low as 6 to 8 percent in early 1982, though most economic forecasters today do not believe this will be the case. The Metropolitan Phoenix inflation rate is still slightly higher than the national average, but this relationship is not inherent and may change.

After more than a decade of increasing inflation rates, the 1980s have begun with a new government administration and, perhaps, a new public attitude. The inflation rate of the 1980s will be largely dependent upon these two factors, though inflation depends upon the interaction of a multitude of factors. The inflation rate by the middle 1980s could vary from as low as the 4 percent predicted by the administration to as high as 18 percent, which would occur if the trend of the 1970s continues into the 1980s.

A Survey of Arizona Business Conditions

HAROLD FEARON

The Arizona economy continued to register cautious advances again in April, according to results from the monthly business survey of the Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona. All indicators, with the exception of purchased materials inventory levels, were up, although the rates of increase were small. The price indicator increased again, but at the lowest increase rate in any of the past eight months, showing that the efforts to reduce inflation are now having some effect, which is an encouraging sign for the future well-being of the economy.

The purchasing business survey now is in its nineteenth year of consecutive monthly reporting on the current status of the Arizona economy. Data are gathered through a questionnaire sent at the close of each month to purchasing managers throughout the state, asking them to indicate the direction of activity — higher, unchanged, or lower — on six key indicators of economic activity in the month just ended. Since these purchasing managers deal daily with the forces of supply and demand, they are in a prime position to provide timely and accurate information on current business trends, which enables economic turning points to be spotted.

Prices paid for major purchased items continued their upward rise in April, but the rate of increase moderated again, for the fourth month in a row, and was the lowest monthly increase since last August. Forty-nine percent of the purchasing managers said their firm paid higher prices in April compared to March; 47 percent saw prices unchanged; while 4 percent enjoyed an overall price decrease. The rates of price increase so far in 1981 have been well under almost all months of the previous two years, which indicates we are having some success in the battle against inflation and should provide a sounder base for future economic advances. Obviously, we still have a long way to go, but we are moving in the right direction.

Delivery time on shipments from vendors continued to stretch out, at a rate consistent with the previous month. Longer delivery times were reported by 26 percent of the firms; 12 percent got faster vendor service. The moderate increases shown by this indicator give further evidence that the economy is operating well below its potential capacity.

Inventory levels of purchased materials dropped again for the third month in a row, although the decreases have been relatively minor. Thirty-two percent of the firms cut stocks, while only 22 percent added to inventory. Arizona firms are keeping a tight rein on inventories, which is a good sign for continuation and intensification of economic growth down the road.

New orders received from customers went up again in April for the fourth consecutive month, although at a smaller rate than in March. Thirty-three percent said their firm booked more new business in April than in March, compared to the 25 percent who saw their orders

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shrink. The new order indicator has shown an increase in all but one of the past nine months, and while the increases have been relatively small, steady progress is evident.

Production followed the same upward trend as shown by new order receipts. Production was up in 27 percent of the firms; 18 percent reduced operating rates. This increase was smaller than that reported in March, but rising output rates have occurred in all but two of the past nine months.

Employment of Arizona firms was up in April, reversing the slight dip of the previous month. Twenty-two percent of the firms added to their work force compared to 16 percent who pared payrolls. Employment has seen only marginal growth so far this year, but it is slowly moving up.

While the four months of 1981 have not seen the economic growth that Arizonans have come to expect, the economy has been moving cautiously in an upward direction, and the rate of price hikes is slowing. The next several months likely will see a continuation of moderate growth as the economy positions itself for more dramatic growth performance.

The results of the April purchasing survey are shown in Table 1.

TABLE 1

APRIL PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (April compared to March)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	49	47	4
Delivery time from vendors	26	62	12
Purchased materials inventory level	22	46	32
New orders received	33	42	25
Production	27	55	18
Employment	22	62	16

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

ARIZONA SALES OF ELECTRICAL POWER
By Month in Millions of KWH*

Current Month:	*Actual:*		*Percent Change Current Month From:*	
	1981	*1980*	*Same Month/ Previous Year*	*Previous Month*
March	2413.9	2203.6	+ 9.5	+ 11.8

* Based on reports from major suppliers.

Arizona New Housing Starts: Monthly Report

FEBRUARY, 1981

BUILDING PERMITS ISSUED

	1 Family	Mobile Homes	Duplex	3-4 Families	5 or More	Total Units
APACHE CO.	8	2	—	—	—	10
Eagar	3	—	—	—	—	3
St. Johns	—	2	—	—	—	2
Springerville	1	—	—	—	—	1
Unincorporated	4	—	—	—	—	4
COCHISE CO.	31	38	1	—	—	71
Benson	3	3	—	—	—	6
Bisbee	—	—	—	—	—	—
Douglas	1	—	—	—	—	1
Huachuca City	—	—	—	—	—	—
Sierra Vista	8	4	—	—	—	12
Tombstone	—	1	1	—	—	3
Unincorporated	19	30	—	—	—	49
Willcox	—	—	—	—	—	—
COCONINO CO.	33	28	—	—	—	61
Flagstaff	18	—	—	—	—	18
Fredonia	—	1	—	—	—	1
Page	3	10	—	—	—	13
Unincorporated	12	17	—	—	—	29
Williams	—	—	—	—	—	—
GILA CO.	44	11	3	—	—	61
Globe	2	—	—	—	—	2
Hayden	—	—	—	—	—	—
Miami	—	—	—	—	—	—
Payson	15	3	3	—	—	24
Unincorporated	27	8	—	—	—	35
GRAHAM CO.	10	14	—	—	—	24
Pima	—	—	—	—	—	—
Safford	5	—	—	—	—	5
Thatcher	—	4	—	—	—	4
Unincorporated	5	10	—	—	—	15
GREENLEE CO.	—	—	—	—	—	—
Clifton	—	—	—	—	—	—
Duncan	—	—	—	—	—	—
Unincorporated	—	—	—	—	—	—
MARICOPA CO.	1,338	213	12	11	35	2,194
Avondale	—	2	—	—	—	2
Buckeye	2	1	—	—	—	3
Chandler	151	—	—	4	—	167
El Mirage	—	—	—	—	—	—
Gila Bend	1	—	—	—	—	1
Gilbert	8	2	—	—	—	10
Glendale	83	—	—	—	8	133
Goodyear	—	—	—	—	—	—
Guadalupe	—	1	—	—	—	1
Mesa	201	—	4	1	4	476
Paradise Valley	8	—	—	—	—	8
Peoria	41	—	—	—	—	41
Phoenix	503	27	7	3	17	757
Scottsdale	75	—	—	—	—	75
Surprise	—	—	—	—	—	—
Tempe	60	—	—	2	5	124
Tolleson	—	—	—	—	—	—
Unincorporated	204	180	1	1	1	395
Wickenburg	1	—	—	—	—	1
Youngtown	—	—	—	—	—	—

N/R: No report.

BUILDING PERMITS ISSUED

	1 Family	Mobile Homes	Duplex	3-4 Families	5 or More	Total Units
MOHAVE CO.	65	96	—	—	2	178
Kingman City	9	1	—	—	—	10
Kingman Area	10	25	—	—	2	52
Lake Havasu City	26	3	—	—	—	29
Lake Havasu Area	—	7	—	—	—	7
Mohave Valley N.	10	30	—	—	—	40
Mohave Valley S.	7	20	—	—	—	27
Dolan Springs	1	6	—	—	—	7
Sacramento Val.	1	3	—	—	—	4
Mohave General	1	1	—	—	—	2
NAVAJO CO.	33	16	—	—	—	49
Holbrook	1	—	—	—	—	1
Show Low	2	2	—	—	—	4
Snowflake	5	—	—	—	—	5
Taylor	1	5	—	—	—	6
Unincorporated	22	9	—	—	—	31
Winslow	2	—	—	—	—	2
PIMA CO.	271	216	6	2	9	1,133
Marana	1	2	—	—	—	3
Oro Valley	1	—	—	—	—	1
South Tucson	—	—	—	—	—	—
Tucson	59	49	6	2	8	498
Unincorporated	210	165	—	—	1	631
PINAL CO.	42	75	—	4	—	133
Apache Junc.	14	23	—	1	—	41
Casa Grande	N/R	N/R	N/R	N/R	N/R	N/R
Coolidge	—	3	—	—	—	3
Eloy	—	—	—	—	—	—
Florence	—	—	—	—	—	—
Kearny	—	—	—	—	—	—
Mammoth	—	3	—	—	—	3
Superior	—	—	—	—	—	—
Unincorporated	28	46	—	3	—	86
SANTA CRUZ CO.	4	—	—	—	—	4
Nogales	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	—	—	—	—	—	—
Unincorporated	4	—	—	—	—	4
YAVAPAI CO.	108	45	4	4	1	348
Chino Valley	4	4	—	—	—	8
Clarkdale	1	—	—	—	—	1
Cottonwood	6	2	—	—	—	8
Jerome	—	—	—	—	—	—
Prescott	13	—	2	2	—	25
Prescott Valley	15	7	1	—	—	24
Unincorporated	69	32	1	2	1	282
YUMA CO.	22	—	—	3	1	38
Parker	—	—	—	—	—	—
Somerton	2	—	—	—	—	2
Unincorporated	8	—	—	—	1	14
Wellton	—	—	—	—	—	—
Yuma	12	—	—	3	—	22
Total, Maricopa Co., March 1981	1,338	213	12	11	35	2,194
Total, Maricopa Co., March 1980	825	179	7	13	11	1,276
Percent Change	62	18	71	-15	218	71
Total, Arizona, March 1981	2,009	754	26	24	48	4,304
Total, Arizona, March 1980	1,579	686	13	22	16	2,642
Percent Change	27	9	100	9	200	62

MARCH, 1981

Arizona Building Permits: Monthly Report

	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
APACHE CO.	11	215,500	—	—	—	—	—	—	11	215,500
Eagar	3	155,000	—	—	—	—	—	—	3	155,000
St. Johns	3	N/C	—	—	—	—	—	—	3	N/C
Springerville	1	N/C	—	—	—	—	—	—	1	N/C
Unincorporated	4	60,500	—	—	—	—	—	—	4	60,500
COCHISE CO.	119	2,188,612	5	161,824	1	2,000	85	222,758	210	2,575,194
Benson	9	136,000	—	—	—	—	3	3,150	12	139,150
Bisbee	5	17,550	—	—	—	—	—	—	5	17,550
Douglas	11	99,538	1	31,824	—	—	12	45,722	24	177,084
Huachuca City	5	8,500	—	—	1	2,000	—	—	6	10,500
Sierra Vista	25	441,589	—	—	—	—	55	102,888	80	544,477
Tombstone	7	40,450	—	—	—	—	—	—	7	40,450
Unincorporated	54	1,440,185	4	130,000	—	—	11	70,348	69	1,640,533
Willcox	3	4,800	—	—	—	—	4	650	7	5,450
COCONINO CO.	93	1,891,943	3	52,000	—	—	25	116,246	121	2,060,189
Flagstaff	31	1,104,384	3	52,000	—	—	12	63,419	46	1,219,803
Fredonia	1	N/C	—	—	—	—	2	500	3	500
Page	14	215,293	—	—	—	—	3	7,200	17	222,493
Unincorporated	45	570,948	—	—	—	—	3	38,677	48	609,625
Williams	2	1,318	—	—	—	—	5	6,450	7	7,768
GILA CO.	94	1,328,709	3	118,000	—	—	24	61,703	121	1,508,412
Globe	6	26,400	—	—	—	—	8	20,700	14	47,100
Hayden	—	—	—	—	—	—	2	700	2	700
Miami	7	20,400	—	—	—	—	—	—	7	20,400
Payson	27	358,859	—	—	—	—	9	1,703	36	360,562
Unincorporated	54	923,050	3	118,000	—	—	5	38,600	62	1,079,650
GRAHAM CO.	47	608,587	3	80,000	—	—	3	26,000	53	714,587
Pima	—	—	—	—	—	—	—	—	—	—
Safford	15	181,450	2	10,000	—	—	—	—	17	191,450
Thatcher	9	74,000	—	—	—	—	2	23,000	11	97,000
Unincorporated	23	353,137	1	70,000	—	—	1	3,000	25	426,137
GREENLEE CO.	—	—	—	—	—	—	—	—	—	—
Clifton	—	—	—	—	—	—	—	—	—	—
Duncan	—	—	—	—	—	—	—	—	—	—
Unincorporated	—	—	—	—	—	—	—	—	—	—
MARICOPA CO.	2,438	65,312,505	113	39,170,829	41	12,912,912	2,053	30,376,849	4,645	147,773,095
Avondale	2	25,200	—	—	—	—	15	79,094	17	104,294
Buckeye	5	51,174	1	10,000	—	—	—	—	6	61,174
Chandler	179	4,791,430	6	627,320	3	392,000	220	1,279,731	408	7,090,481
El Mirage	4	75	—	—	—	—	1	164	5	239
Gila Bend	2	73,400	—	—	—	—	—	—	2	73,400
Gilbert	24	394,335	—	—	—	—	11	26,239	35	420,574
Glendale	106	2,833,180	17	1,338,500	1	55,000	243	1,598,945	367	5,825,625
Goodyear	3	5,450	—	—	—	—	12	30,820	15	36,270
Guadalupe	1	—	1	—	—	—	1	—	3	—
Mesa	248	8,260,885	15	15,568,856	5	4,507,350	340	3,449,926	608	31,787,017
Paradise Valley	27	1,423,530	—	—	—	—	28	220,466	55	1,643,996
Peoria	51	962,938	1	110,772	—	—	64	112,696	116	1,186,406
Phoenix	868	27,005,518	42	17,183,010	20	5,254,662	658	7,319,824	1,588	56,763,014
Scottsdale	116	5,540,771	4	1,769,771	—	—	183	1,107,774	303	8,418,316
Surprise	6	3,925	—	—	—	—	3	46,500	9	50,425
Tempe	109	3,400,300	22	1,767,600	12	2,703,900	55	970,000	198	8,841,800
Tolleson	5	5,750	1	20,000	—	—	2	55	8	25,805
Unincorporated	659	10,450,380	3	775,000	—	—	216	14,128,615	878	25,353,995
Wickenburg	1	72,000	—	—	—	—	—	—	1	72,000
Youngtown	22	12,264	—	—	—	—	1	6,000	23	18,264

MARCH, 1981

Arizona Building Permits: Monthly Report (Continued)

	*RESIDENTIAL**		*COMMERCIAL*		*INDUSTRIAL*		*OTHER*		*TOTAL*	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
MOHAVE CO.	286	3,991,904	22	1,353,686	—	—	233	370,257	541	5,715,847
Kingman City	23	349,794	7	352,240	—	—	5	2,639	35	704,673
Kingman Area	55	625,966	3	324,480	—	—	43	41,169	101	991,615
Lake Havasu City	39	1,143,960	5	394,054	—	—	22	125,695	66	1,663,709
Lake Havasu Area	10	106,854	—	—	—	—	8	13,624	18	120,478
Mohave Valley N.	75	805,308	4	83,904	—	—	94	101,219	173	990,431
Mohave Valley S.	55	679,619	2	192,096	—	—	44	69,198	101	940,913
Dolan Springs	18	131,439	—	—	—	—	10	10,441	28	141,880
Sacramento Valley	6	70,996	1	6,912	—	—	6	5,216	13	83,124
Mohave Co. General	5	77,968	—	—	—	—	1	1,056	6	79,024
NAVAJO CO.	81	1,328,831	4	98,064	—	—	6	32,940	91	1,459,835
Holbrook	1	32,000	—	—	—	—	—	—	1	32,000
Show Low	4	78,021	1	4,000	—	—	—	—	5	82,021
Snowflake	5	N/C	—	—	—	—	—	—	5	N/C
Taylor	7	62,000	1	30,000	—	—	1	7,000	9	99,000
Unincorporated	59	986,310	2	64,064	—	—	4	25,940	65	1,076,314
Winslow	5	170,500	—	—	—	—	1	—	6	170,500
PIMA CO.	802	16,477,958	47	91,748,441	1	68,000	535	4,339,956	1,385	112,634,355
Marana	4	N/C	1	N/C	—	—	—	—	5	N/C
Oro Valley	2	159,000	—	—	—	—	—	—	2	159,000
South Tucson	12	25,000	1	31,936	—	—	6	2,500	19	59,436
Tucson	281	3,717,356	21	10,584,505	1	68,000	259	2,944,376	562	17,314,237
Unincorporated	503	12,576,602	24	81,132,000	—	—	270	1,393,080	797	95,101,682
PINAL CO.	163	2,180,066	8	470,630	—	—	85	175,038	256	2,825,734
Apache Jct.	51	874,088	1	119,843	—	—	38	67,956	90	1,061,887
Casa Grande	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Coolidge	9	32,136	1	65,000	—	—	1	5,900	11	103,036
Eloy	6	5,593	1	120,000	—	—	—	—	7	125,593
Florence	1	500	2	787	—	—	1	8,000	4	9,287
Kearny	—	—	—	—	—	—	—	—	—	—
Mammoth	3	N/C	—	—	—	—	—	—	3	N/C
Superior	1	800	—	—	—	—	5	1,736	6	2,536
Unincorporated	92	1,266,949	3	165,000	—	—	40	91,446	135	1,523,395
SANTA CRUZ CO.	7	399,909	2	24,000	—	—	2	4,535	11	428,444
Nogales	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	1	425	—	—	—	—	—	—	1	425
Unincorporated	6	399,484	2	24,000	—	—	2	4,535	10	428,019
YAVAPAI CO.	240	5,631,099	16	8,302,260	1	40,000	100	345,199	357	14,318,558
Chino Valley	13	146,475	2	22,300	—	—	—	—	15	168,775
Clarkdale	5	48,050	—	—	—	—	—	—	5	48,050
Cottonwood	24	280,236	3	181,000	1	40,000	7	32,400	35	533,636
Jerome	—	—	—	—	—	—	1	500	1	500
Prescott	40	888,978	4	382,080	—	—	53	159,696	97	1,430,754
Prescott Valley	28	614,828	—	—	—	—	—	—	28	614,828
Unincorporated	130	3,652,532	7	7,716,880	—	—	39	152,603	176	11,522,015
YUMA CO.	82	1,597,707	8	457,965	2	76,110	39	273,803	131	2,405,585
Parker	—	—	—	—	1	44,000	6	35,000	7	79,000
Somerton	3	82,920	—	—	—	—	—	—	3	82,920
Unincorporated	44	791,470	5	294,036	—	—	7	50,155	56	1,135,661
Wellton	—	—	—	—	—	—	1	29,500	1	29,500
Yuma	35	723,317	3	163,929	1	32,110	25	159,148	64	1,078,504
Total Maricopa Co. March, 1981	2,438	65,312,505	113	39,170,829	41	12,912,912	2,053	30,376,849	4,645	147,773,095
Total Maricopa Co. March, 1980	1,848	35,113,070	166	32,207,123	57	9,791,793	2,097	25,122,727	4,168	102,234,713
Percent Change	31	86	-31	21	-28	31	-2	20	11	44
Total Arizona, March, 1981	4,463	103,153,330	234	142,037,699	46	13,099,022	3,190	36,345,284	7,933	294,635,335
Total Arizona, March, 1980	4,380	70,529,753	293	65,719,753	62	12,257,436	2,984	33,040,011	7,719	181,546,953
Percent Change	1	46	-20	116	-25	6	6	10	2	62

N/R: No report. N/C: Not collected. *Includes mobile homes

Maricopa County Retail Food Prices

APRIL, 1981

Retail food prices in Maricopa County fell 0.9 percent in April, following a 0.5 percent increase in March. The food price survey is compiled by the Bureau of Business and Economic Research, College of Business Administration, at Arizona State University. Cosponsor of the study is Valley National Bank. The April index of 259.2 indicates that shoppers would now have to pay $25.92 for a similar basket of foods that would have cost $10.00 in 1967. These foods could have been purchased for $23.56 one year ago. The April, 1981 index reflects a 10 percent increase over the April, 1980 value.

The decline in the April index value was the first decline since February, 1980. Reductions were noted in the *Meats, Poultry, Fish, and Eggs* subgroup (-2.8 percent), and *Other Foods* (-1.5 percent). The other three subgroups posted moderate increases. *Dairy Products* rose 1.0 percent, followed by *Fruits and Vegetables* (0.9 percent) and *Cereals and Bakery Products* (0.7 percent).

Lower prices in the categories of meats and poultry contributed to the lower index value for the *Meats, Poultry, Fish, and Eggs* subgroup. Almost all pork prices were down, notably pork chops (-8.2 percent), noncanned ham (-8.0 percent), and bacon (-6.9 percent). Beef prices were also lower. Ground beef (other than canned) dropped 14.5 percent, while steak, other than round and sirloin, fell 6.2 percent. Prices for fresh whole chicken and fresh/frozen chicken parts dipped 2.4 percent. Partially counteracting these declines were rising prices for eggs (8.3 percent) and fresh/frozen fish and shellfish (4.6 percent).

In the *Other Foods* subgroup, abundant supplies of sugar have pushed prices in the sugar/artificial sweeteners category down by 6.6 percent. This is the first decline for sugar/artificial sweeteners since August, 1980. Also falling were prices for carbonated drinks (-6.5 percent) and canned/packaged soup (-2.4 percent). The most significant increase in the subgroup was posted for the category of nondairy substitutes, imitation milk, and peanut butter (2.3 percent), and was primarily due to the rising cost of peanut butter.

A 2.8 percent price increase for fresh milk (other than whole milk) and cream contributed to an overall gain for the *Dairy Products* subgroup. Although prices for butter and cheese also rose (0.9 percent and 0.8 percent respectively), a drop in prices for ice cream and related products (0.8 percent) partially counteracted these gains.

Mixed price changes occurred in *Fruits and Vegetables*, resulting in a small overall increase for this subgroup. Prices rose 26.9 percent for apples, followed by tomatoes (17.5 percent). Soaring orange juice prices led to the sharp gain in the frozen fruit and fruit juices category (13.5 percent). Offsetting these gains were falling prices in the category of fresh vegetables (-17.6 percent), caused in part by numerous special sale prices for cucumbers and celery. In addition, prices dropped 14.9 percent for oranges.

Although many price changes were posted for the *Cereals and Bakery Products* subgroup, most of the increases were matched by decreases in other categories. Prices for bread (other than white) rose 4.1 percent, followed by fresh sweet rolls, coffee cake, and doughnuts (2.5 percent) and fresh biscuits, rolls, and muffins (2.5 percent). Counteracting these increases was a decline in flour and prepared flour mixes (-2.9 percent) and rice, macaroni, and cornmeal (-1.1 percent).

A comparison of January, 1981 Food Consumed at Home for Maricopa County with index values for four selected metropolitan areas reveals that the outlays required to purchase a food group in January, 1981 (obtainable for an outlay of $10.00 at 1967 average prices) were $25.87 in Maricopa County; $26.34 in Los Angeles-Long Beach; $26.90 in San Francisco-Oakland; $26.72 in Chicago-Northwestern Indiana; and averaged $26.56 in the United States.

TABLE 1

INDEX FOR FOOD CONSUMED AT HOME
Maricopa County, United States, and Selected Metropolitan Areas
(Average 1967 = 100 percent)

Group	Maricopa County Apr. '81[a]	Maricopa County Jan. '81[b]	United[*] States Jan. '81	Los Angeles[*] Long Beach Jan. '81	San Francisco Oakland[*] Jan. '81	Chicago[*] Northwestern Indiana Jan. '81
Food Consumed at Home	259.2	258.7	265.6	263.4	269.0	267.2
Cereals and Bakery Products	250.1	243.5	262.9	263.6	268.8	268.0
Meats, Poultry, Fish, and Eggs	255.4	262.4	255.1	254.8	261.3	261.8
Dairy Products	231.4	226.7	240.1	231.7	233.8	230.3
Fruits and Vegetables	251.8	243.3	257.6	254.0	261.8	257.3
Other Foods Consumed at Home	289.0	290.2	320.5	315.4	330.8	327.3

[*] Computed from data contained in *The Consumer Price Index*, U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

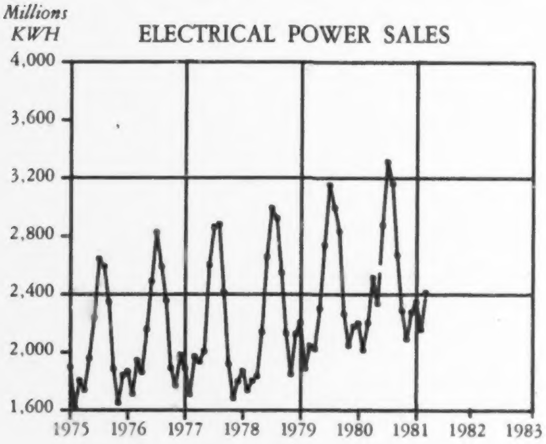
[a] Maricopa County food prices are reported for the month closest to publication.

[b] Comparisons of food prices among various cities and the United States average are made on the basis of earlier months because of the lag in collecting price reports from these other areas.

Note: Index comparisons between Maricopa County and the other regions show only that food prices in Maricopa County have increased more or less than food prices in the other regions since 1967. The indexes cannot be used to determine the actual differences in food price levels between the regions.

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperative cosponsorship with Valley National Bank.

Arizona Economic Indicators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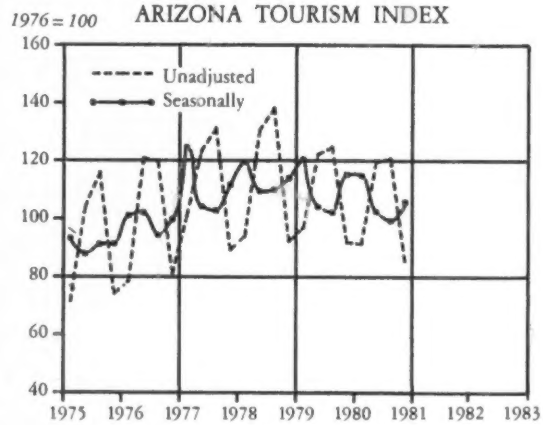
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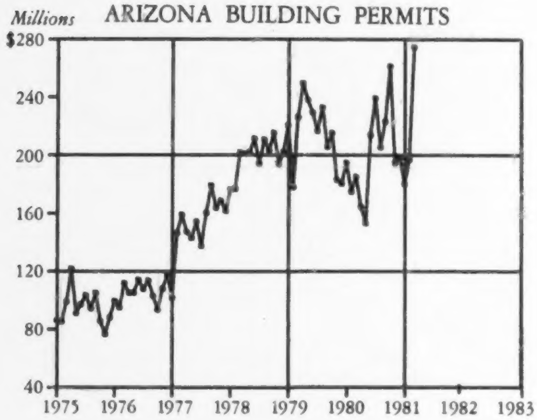
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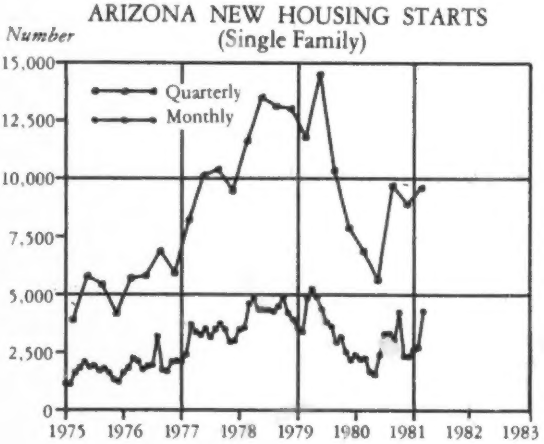
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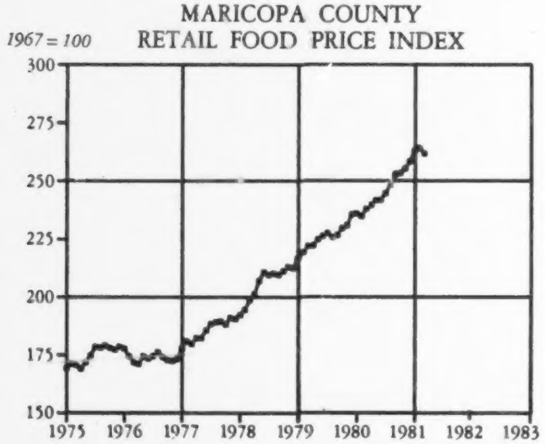
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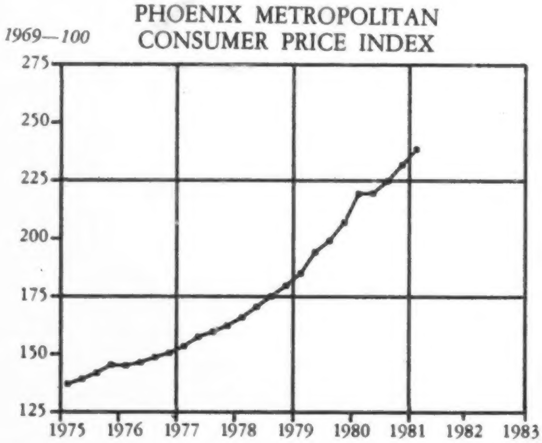
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Source: All data compiled by the Bureau of Business and Economic Research, College of Business Administration, Arizona State University.

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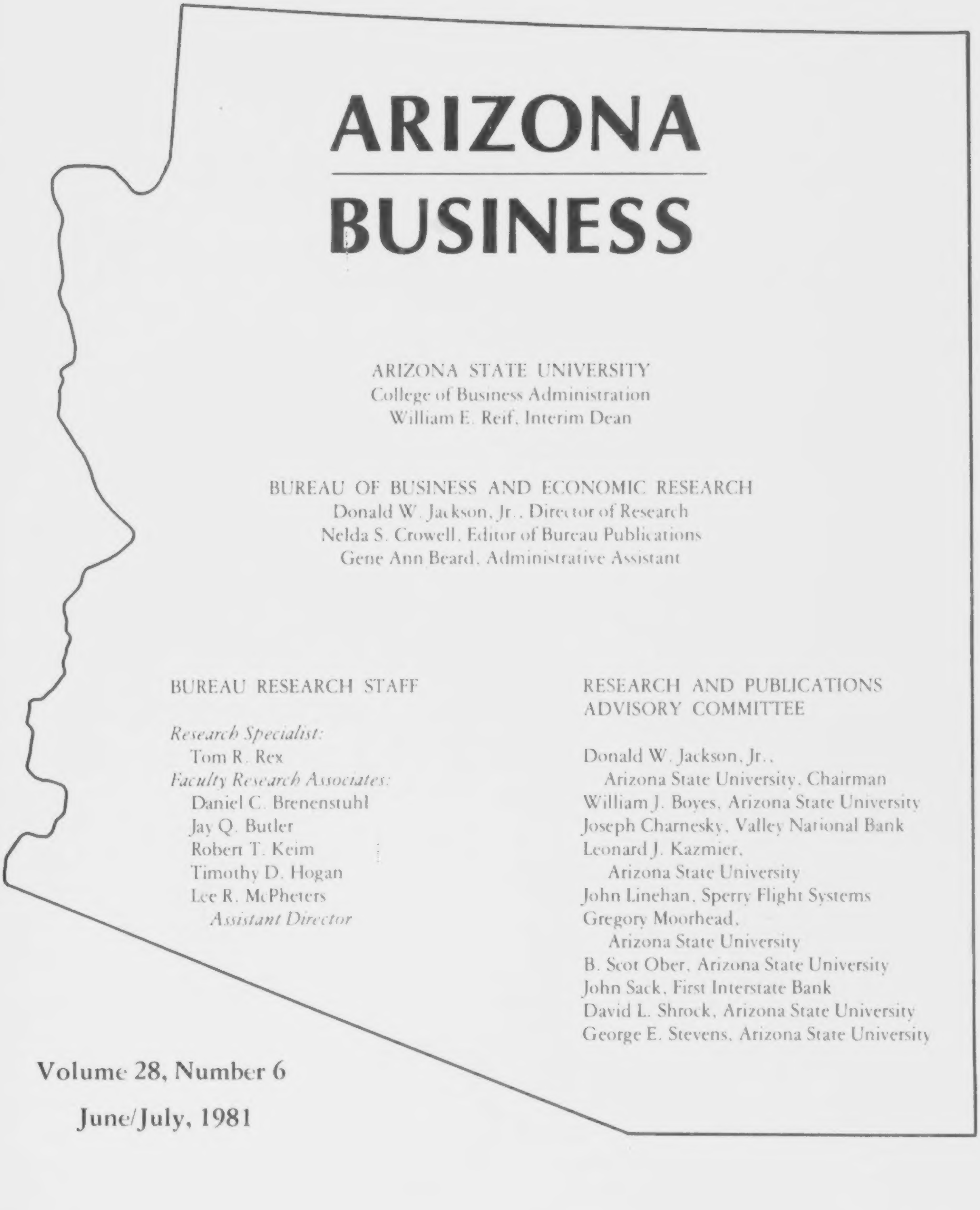

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Report To The Reader

No one doubts that the cost of living is rising rapidly. Yet, the measurement of this cost is the object of considerable interest among those who must relate the cost of living to other economic values and measures. This issue of *Arizona Business* contains two articles that deal with this subject.

"Phoenix Cost of Living: A Comparison and Evaluation," by Dr. Robert T. Keim, Faculty Research Associate in the ASU Bureau of Business and Economic Research, discusses the problems of methodology that are involved when one attempts to make comparisons among cities. In this study, Dr. Keim has developed methodology that now allows Phoenix living costs to be compared with living costs in other cities by using the Urban Family of Four Budget, as used by the Bureau of Labor Statistics.

Dr. Keim's study shows that the Phoenix family budget is now $21,844, ranking the city twenty-second among twenty-five cities. Using this same methodology to trace the budget back to 1969, he also found that the city has held much the same position throughout a twelve-year period. Its lowest rank was eighteenth in 1978, and the highest was twenty-second, which occurred in 1970, 1975, 1976, 1977, and 1980.

A general discussion of cost of living measurement and some conclusions about various cities are found in this month's "Arizona Business Scene." The article discusses four other cost of living studies and shows comparable index ratings of the various cities. In all the studies, the cost of living in Phoenix is generally near or below the national average.

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Factors Influencing Arizona's Birth Rates

SUZANNE DANDOY

Trends in Arizona's birth rate have come under investigation recently as demographers, economists, and reporters try to predict the future of the state's population growth. In a recent article in *Arizona Business*, Happel and Hogan[1] forecasted increasing birth rates for the nation and the state in the 1980s. Such a forecast has definite implications for the Arizona business community and public officials who must plan products, facilities, and services for a changing population. To utilize such forecasts in specific planning decisions, however, the differences in birth rates among Arizona's varied population groups should be examined.

Although Arizona's recorded birth rate (births per 1,000 population) has been higher than that of the United States since 1925, the pattern of increases and decreases has been parallel to the nation.[2] Yet, within the state, birth rates are not uniform but instead, they vary by county and by cultural group. In addition, marked changes in birth statistics have occurred recently with respect to family size, and age and marital status of the mother. Each of these factors affects forecasts concerning the number and needs of children in Arizona.

The following discussion focuses on the differences in birth rates among Arizona's counties and suggests factors that contribute to these differences. By incorporating this information into long-range planning and decision-making, providers of goods and services should be better prepared to target their products to appropriate segments of the population.

BIRTHS AND MIGRATION

Increase in any state's population results from two sources: the natural increase represented by a higher number of births than deaths, and the net increase from migration. From 1963 to 1969 the natural increase in Arizona was the more important factor, while in the past twelve years up to two-thirds of the population growth has resulted from persons moving into the state.[3] Growth in individual counties has varied, depending on which of these factors, i.e., birth or migration, had a more significant influence during a particular time period.

Births

The long-term trend in recorded birth rates for each county in the past thirty years is presented in Table 1.

Variations in birth rates and migration affect Arizona counties in different ways. Ethnic and racial concentrations, religion, child bearing age, and marital status have all had an impact on the population profiles of individual counties. These variations are important to agencies that must plan for recreation, transportation, health care, social service, and consumer needs.

Suzanne Dandoy is a professor in the Center for Health Services Administration, College of Business Administration, Arizona State University.

TABLE 1

BIRTH RATES* BY COUNTY OF RESIDENCE, ARIZONA, 1950-1980

County	*1950*	*1955*	*1960*	*1965*	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*
United States	23.6	24.6	23.7	19.4	18.4	17.2	15.6	14.9	15.0	14.8	14.7	15.3	15.3	15.8	16.0
ARIZONA	27.4	28.2	28.1	21.3	21.2	20.6	19.1	18.3	18.5	17.8	17.6	17.8	17.4	17.7	18.4
Apache	27.4	34.7	48.6	44.2	42.4	39.1	39.9	34.6	35.2	35.0	36.2	34.6	33.0	31.1	31.3
Cochise	24.3	27.2	30.0	23.9	21.8	23.4	22.1	21.3	20.2	20.3	18.5	19.8	20.0	18.3	18.3
Coconino	32.1	30.3	34.7	29.1	29.1	27.0	24.1	23.9	23.1	22.6	22.1	22.6	21.3	20.1	24.3
Gila	29.7	28.8	28.9	27.0	23.7	23.7	20.3	20.3	21.7	20.5	19.6	20.4	18.5	19.8	19.0
Graham	29.6	26.4	23.8	21.2	22.4	21.2	22.3	19.7	19.9	21.0	21.2	23.5	20.6	22.0	22.4
Greenlee	34.4	32.5	22.2	16.2	22.5	27.6	20.6	24.6	23.2	25.0	23.4	26.9	22.3	22.3	23.8
Maricopa	26.5	27.0	26.8	19.6	20.3	19.4	17.8	17.3	17.4	16.4	16.2	16.5	16.4	17.2	17.8
Mohave	27.0	20.4	23.8	21.1	18.0	16.5	14.7	14.3	14.7	14.6	15.0	15.3	14.6	14.7	15.7
Navajo	30.4	29.1	38.0	34.7	31.2	28.9	27.2	27.1	26.4	28.1	27.2	27.6	24.1	24.3	28.2
Pima	27.3	28.2	26.8	19.5	19.2	19.0	17.9	16.6	17.2	16.5	16.2	16.6	15.9	15.6	16.8
Pinal	32.6	35.9	31.0	24.7	22.7	22.5	21.1	20.3	20.8	19.5	18.9	18.3	19.4	18.1	20.2
Santa Cruz	26.8	23.5	31.9	21.1	21.3	23.1	21.1	23.2	20.5	20.9	23.2	22.0	23.0	23.5	24.4
Yavapai	19.7	18.0	21.8	15.0	14.7	14.2	14.9	12.6	12.8	12.9	14.8	14.0	13.0	14.5	13.7
Yuma	26.2	35.2	27.6	21.7	22.9	24.0	22.1	21.9	22.4	22.9	24.3	21.8	21.2	22.6	20.0

*Per 1,000 estimated mid-year population.

Source: Vital Records and Information Services, Arizona Department of Health Services.

After a peak in the 1950s, most areas in Arizona had a gradual decrease in birth rates through 1979, but in 1980, they showed an increase. However, the increase in Santa Cruz County began in 1976, four years earlier, and the increase in Maricopa County began in 1979, one year earlier. In contrast, Yuma County has had a marked decrease in birth rates for the past six years, and decreasing rates were recorded for 1980 in two other counties: Gila and Yavapai. Cochise County had no change in its birth rate from 1979 to 1980. Thus, although Arizona experienced an increase in the statewide birth rate in 1980, four individual counties did not reflect this pattern. Anyone wishing to use birth trends to plan for future needs should be aware of the county differences and the contributing factors which are discussed in the following section.

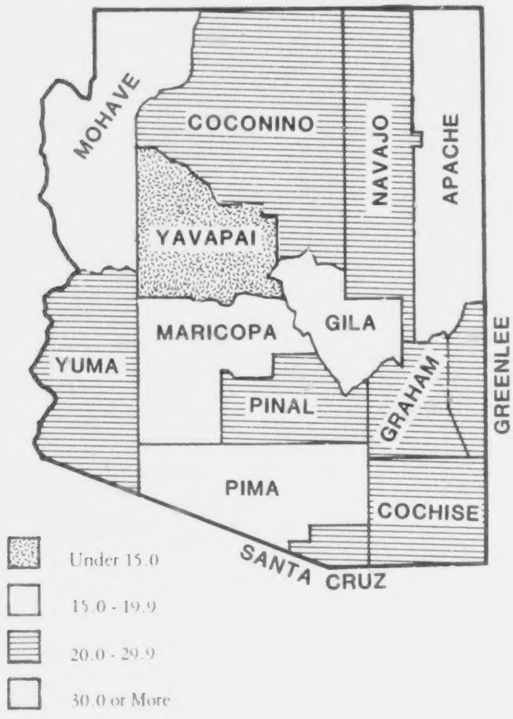
In the past thirty years the magnitude of the birth rate has been as much as three times greater in Apache County, which has the state's highest recorded rate, than in Yavapai County, which has the lowest. Birth rates in the other twelve counties are between these two extremes. The birth rate differences between counties have moderated in recent years as the higher rates among the Indians in Apache, Coconino, and Navajo counties have fallen; yet variations remain due to the diversity of the populations (Figure I). The birth rates in nine of the counties remain considerably higher than state or national averages and provide those counties with younger populations and a larger proportion of children. The significance of these differences in birth rates must be judged by decision makers planning for the future of individual communities, particularly in terms of housing, health care, transportation, and community services.

Migration

Just as birth rates have had a varied influence on the population profile of Arizona's fourteen counties, the impact of migration has also not been uniform throughout the state. Contrary to popular belief, the migrants moving to Arizona are not chiefly elderly retirees; instead they are mainly families in the child-bearing and child-rearing age groups. The majority of these younger persons who are moving to Arizona are settling in the metropolitan areas of Coconino, Maricopa, and Pima counties, the areas where economic growth has been greatest. These three counties have each experienced a 52 to 58 percent increase in population in the past ten years. In contrast, Apache and

FIGURE I

BIRTH RATES* BY
COUNTY OF RESIDENCE, ARIZONA, 1980



*Per 1,000 estimated mid-year population.
Source: Vital Records and Information Services, Arizona Department of Health Services.

Navajo counties, the large population increase (60 and 43 percent, respectively) is due more to births than to migration.

Mohave and Yavapai counties have experienced a heavy influx of older residents. Both counties recorded the largest percentage increases in population from 1970 to 1980 (Mohave, 117 percent; Yavapai, 85 percent); yet, these counties also recorded the highest death rates and lowest birth rates in Arizona. The birth rates have remained below the state and national averages for the past 30 years. Thus, the population growth in these two counties results primarily from inmigration of older age persons.

Gila County also has a high death rate among its citizens but this is offset by a high birth rate. The ten-year population increase in that county has been one of the lowest in the state, indicating a relatively stable population with little natural increase or net migration.

In these three counties (Gila, Mohave, and Yavapai) a significant increase in the birth rate should not be anticipated; growth will come from older age groups who will expand the need for adult services and products. Particular emphasis should be given to recreational needs, health services, and transportation since many of these adults settle in areas at considerable distance from the major towns.

Greenlee is the one county which had a relatively small population growth in the past ten years — only 12 percent. Natural increase due to births was the only significant factor contributing to population expansion in Greenlee County in that time period.

The continually higher birth rates and the inmigration of young families to Arizona have resulted in a population with a median age of 28 years compared with the United States median age of 30.2 years.[1] Thus, the state has a young, growing population with an increasing birth rate.

RACIAL AND ETHNIC GROUPS

One of the additional factors which influence the birth rate trends and variations is the presence of diverse cultural groups in the state. Arizona's residents include several ethnic groups that have birth rates considerably higher than the national or state averages. For 1980 the recorded births and birth rates by ethnic group in Arizona are shown in Table 2. In turn, Arizona counties differ noticeably in the racial and ethnic composition of their populations, and the recorded county birth rates reflect these differences.

TABLE 2

BIRTHS AND BIRTH RATES* BY
ETHNIC GROUP OF CHILD, ARIZONA, 1980

Ethnic Group of Child	*Number*	*Rate*
White (excluding Spanish)	29,226	14.6
Spanish-origin	13,891	31.5
Indian	4,510	27.0
Black	1,880	23.0
Asian	542	22.5
Total	50,049	18.4

*Per 1,000 estimated mid-year population.

Source: Vital Records and Information Services, Arizona Department of Health Services.

Indians

The relatively high birth rate among the Indians is reflected in the rates recorded for Apache, Navajo, and Coconino counties, where Indians constitute, respectively, 75, 51, and 36 percent of the county's population. In Gila County, Indians represented 17 percent of the population and contributed 22 percent of the births recorded in 1980. To a lesser extent Indians affect the high birth rates in Graham and Pinal counties.

Since many of the services for Indians are provided by the federal government, increasing numbers of Indian children do not represent the same demands on the communities as high numbers of non-Indian births. Schooling and health care become a federal responsibility on and near Indian reservations. However, the demands for social services, food, children's clothing, and entertainment may be significantly affected by high birth rates among the Indians.

Blacks and Asians

Because the black population in Arizona is relatively small (3 percent of the state's total residents) and is concentrated chiefly in the two metropolitan areas (83 percent live in Maricopa and Pima counties), the higher birth rate among the blacks does not significantly affect the overall state or county population figures. In 1980 births of black infants represented 3.7 percent of all recorded births in Arizona. Similarly, the 542 newborn Asian children represented only 1.1 percent of all births; 420 of these infants were born in Maricopa and Pima counties.

Spanish-origin Population

Births to the Spanish-origin population have a pronounced effect on the statistics in areas where this ethnic group is concentrated. As seen in Table 3 the Spanish population contributes disproportionately to the birth rate in nine of Arizona's fourteen counties and is the single most significant contributor to the higher rates of births recorded in Santa Cruz and Yuma counties. Nationwide, a similar situation has been reported: 10 percent of the births in 1979 were to Hispanic women; yet they constituted only 6 percent of all women 18 to 44 years old.[5] In areas that have a large percentage of births occurring in Hispanic families opportunities exist for the community to increase Spanish-language services and to offer products that appeal to this population group.

TABLE 3

PERCENT OF TOTAL POPULATION
AND PERCENT OF BIRTHS, SPANISH-ORIGIN,
BY COUNTY, ARIZONA

County	*Percent of Population Spanish-origin 1979*	*Percent of Births Spanish-origin 1980*
Apache	7.1	5.6
Cochise	37.8	36.2
Coconino	12.9	9.3
Gila	26.8	31.2
Graham	23.9	34.4
Greenlee	50.4	54.0
Maricopa	14.6	25.1
Mohave	6.6	13.8
Navajo	9.8	7.3
Pima	23.8	37.9
Pinal	36.1	45.8
Santa Cruz	77.0	84.8
Yavapai	11.8	10.9
Yuma	25.6	47.1
Total	18.4	27.8

Source: 1979 population percentages from Arizona Department of Economic Security, *Population Estimates of Arizona, as of July 1, 1979;* 1980 birth statistics from Vital Records and Information Services, Arizona Department of Health Services.

RELIGION

Two religious groups have a marked effect on Arizona's birth statistics: the state's approximately 450,000 Catholics and the 140,000 members of the Church of Jesus Christ of Latter-day Saints (Mormons). Both religions encourage large families and discourage the use of artificial means of birth control. Also, both groups cluster in particular locations in the state and, therefore, influence the birth rates in those areas. Since birth certificates do not record parents' religion, it is difficult to determine precise birth rates for these groups. Nevertheless, each of these two religious groups has a social structure, communication mechanisms, and a way of life which are often unique and should be understood and utilized by businesses and agencies hoping to reach these populations.

Catholics

Records from the Phoenix Diocese of the Catholic Church indicate that there were 7,591 infant baptisms and 248,000 persons listed as church members in that diocese in 1980. These figures would give a birth rate of

30.6. The percentage of Catholics in Maricopa County communities varies from 25 to 30 percent.[6] In Cochise, Greenlee, Pinal, and Santa Cruz counties, Catholics are a much larger component of the population and thus contribute significantly to the birth rates.

Mormons

In attempting to determine the birth rate for Mormons, data from Utah, where Mormons represent 70 percent of the population, are helpful. The 1980 birth rate for Utah was 28.7. In 1978, the latest year for which nationwide comparisons are available, Utah reported the highest rate for any state. The average number of children born to women ever married, ages 15 to 44 years, was 3.9 in Utah compared with the average of 2.1 for the United States.[7] In the *Foresight Eighty* study from Western Savings,[8] the city of Mesa, where Mormons account for 16 percent of the population, is reported to have a birth rate of 23.4, compared to 17.5 in Phoenix and 9.8 in Scottsdale. Thus, the Mormon population in Mesa has a direct influence on the birth rate in that community and contributes a need for family-oriented services and products. Other areas where Mormons are a major component of the population are Greenlee County and the nonreservation portions of Apache, Graham, and Navajo counties.

DELAYED CHILD BEARING AND FAMILY SIZE

There has been a steady increase in women of child-bearing age in Arizona in the past ten years. A review of preliminary figures from the 1980 census in Arizona indicates that females from 15 to 44 years of age represented 23.1 percent of the total state population, an increase compared with 20.9 percent in 1970. In numbers this represents an increase from 370,000 to 625,000 women.[9]

Age of Mother

The fertility patterns of the women in this age group have changed and many of them are starting their families at a later age. In the past ten years the percent of births among women 25 to 34 years has increased while the percent of births among women 15 to 24 and among women over 34 years old has decreased (Table 4). The average age of mothers having their first child was 21.1 years in 1970, but advanced to 22.3 years of age in 1980. Thus, we are seeing more women postpone child-bearing until their late twenties and early thirties and cease child-bearing after age 34.

TABLE 4

PERCENTAGE DISTRIBUTION OF
BIRTHS BY MOTHER'S AGE GROUP,
ARIZONA, 1970 AND 1980

Mother's Age Group	*1970*	*1980*
Under 15	0.2	0.3
15 - 19	17.9	16.3
20 - 24	38.1	35.8
25 - 29	25.6	28.9
30 - 34	11.4	13.9
35 - 39	5.0	4.0
40 - 44	1.6	0.8
45 and Over	0.1	0.0
Unknown	0.1	—
Total	100.0	100.0

Source: Vital Records and Information Services, Arizona Department of Health Services.

Number of Children

In addition to being older, the pregnant woman in 1980 was more likely to be having her first or second child. First and second births constituted 71.8 percent of all births in the state in 1980 compared with 63.7 percent of all births in 1970. A somewhat small percentage of last year's births — only 12.9 percent — were to women with three or more children, in contrast with 21.7 percent in 1970. These changes are reflected in the average number of children in the families of mothers giving birth: 2.6 in 1970, 2.1 in 1980. Over ten years the trend has been toward a delay in the age at which women start their families and an earlier curtailment of child-bearing. As a result, women are spending a much shorter period of their lives in a child-bearing role, leaving more time for careers, work outside the home, and personal interests.

Increasing birth rates in women 30 to 34 years of age, especially for first children, was the nationwide trend through 1978, the latest year for which national statistics are available. Both first and second births increased for women 30 to 39 years of age.[10] This trend toward delayed childbearing may be the factor most responsible for the overall increase in Arizona's birth rate in 1980. If women who refrained from having children in 1976-1979 have now started their families, the birth rate for 1980 would represent only a temporary increase that would stabilize in two or three years.

County Comparisons

As with other birth statistics, family size, as measured by the number of previous births, varies among the counties (Table 5). In Apache, Graham, and Navajo counties, births to women with three or more children still comprise over 25 percent of total births and represent larger average family sizes in the Indian and Mormon populations of these counties.

In Pima, Santa Cruz, and Yavapai counties only 10 percent of all births are to women with three or more children; first and second children represented 75 percent of all births in those counties in 1980. It is surprising that Santa Cruz County, having a population with a high birth rate, is not recording more births to women with three or more children. One explanation could be that women from the Mexican side of the border may deliver their first and second children in Nogales, Arizona, the remainder in Nogales, Sonora.

Geographic differences in family size raise significant questions regarding product demand. Do families with more children invest in more durable children's furniture, toys, and yard equipment so that these items will withstand greater use? Or do the financial needs of larger families curtail the amount of funds available for such purchases? If more women are working and delaying childbearing, are the families able to afford higher line products and more recreational pursuits for these fewer children? Or will families purchase items which are less durable, knowing the need for such products will be for only one or two children? Answers to such questions should be gathered from marketing experts in order that products can be directed to specific target populations.

MARITAL STATUS

Arizona's marriage rate (the number of marriages in the total population) has decreased over the past eight years. The high was reached in 1973 with 12.6 per 1,000. By 1980 it had decreased to 11.1 per 1,000. In contrast, the marriage rate for the United States has increased steadily since 1976 to a figure of 10.8 in 1980. Thus, Arizona is experiencing an increasing birth rate with a decreasing marriage rate, implying either more children per marriage, fewer remarriages, or more children born to unmarried women. In fact, the percentage of births to unwed mothers has shown a dramatic increase in the state, from 10.8 percent of all births in 1970 to 18.7 percent in 1980, a rate that nearly doubled in ten years. Last year there were 9,373 babies born to unwed parents in Arizona; of particular concern is the

TABLE 5

PREVIOUS LIVE BIRTHS AND AVERAGE NUMBER OF CHILDREN, BY COUNTY, ARIZONA, 1980

	Total Births		*No Previous Births*[a]		*One*		*Two*		*Three or More*		*Average Number*
County	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*	*of Children*
Apache	1,627	100.0	523	32.1	415	25.5	267	16.4	422	25.9	2.76
Cochise	1,570	100.0	646	41.1	474	30.2	245	15.6	205	13.0	2.13
Coconino	1,824	100.0	749	41.1	486	26.6	305	16.7	284	15.6	2.26
Gila	705	100.0	261	37.0	211	29.9	126	17.9	107	15.2	2.25
Graham	512	100.0	155	30.3	133	26.0	95	18.6	129	25.2	2.65
Greenlee	272	100.0	86	31.6	89	32.7	54	19.9	43	15.8	2.28
Maricopa	26,769	100.0	11,615	43.4	8,095	30.2	3,939	14.7	3,120	11.7	2.05
Mohave	871	100.0	346	39.7	269	30.9	117	13.4	139	16.0	2.44
Navajo	1,899	100.0	573	30.2	494	26.0	341	18.0	491	25.9	2.76
Pima	8,931	100.0	4,048	45.3	2,707	30.3	1,308	14.6	868	9.7	1.96
Pinal	1,840	100.0	709	38.5	569	30.9	317	17.2	245	13.3	2.19
Santa Cruz	499	100.0	215	43.1	153	30.7	79	15.8	52	10.4	2.01
Yavapai	937	100.0	370	39.5	329	35.1	142	15.2	96	10.2	2.06
Yuma	1,793	100.0	685	38.2	562	31.3	315	17.6	231	12.9	2.20
Total	50,049	100.0	20,981	41.9	14,986	29.9	7,650	15.3	6,432	12.9	2.12

[a] Births occurring in 1980 to women with no previous births.

Source: Vital Records and Information Services, Arizona Department of Health Services.

high percentage of teenage unwed mothers; 41.2 percent of these births were to mothers age 19 and under. Even ten years ago Arizona's rate of births per 1,000 unmarried women was the highest in a study of white women in thirty-eight reporting states.[11]

The geographic distribution of unmarried mothers parallels that of the total population. In 1980 over two-thirds of the unwed mothers lived in Maricopa and Pima counties (Table 6). Another 6.6 percent lived in Apache County. Over one-third of all the births in that county (38.3 percent) were births to unwed mothers. The majority of births to unwed mothers in Arizona are among women of Spanish or Indian heritage (Table 7).

In general, the percentage of unwed mothers represents a significant change in family configuration in the state and may indicate an increasing need for services, such as counseling and child day care, for the pregnant teenager and the single parent.

COMPARISON WITH OTHER STATES

Many of the trends observed in Arizona are parallel to those occurring in several other states. In general, the western states have recorded higher rates of birth than the national average.[12] In 1978 only eight states had rates higher than Arizona; two (Mississippi and Louisiana) were in the South, six (Alaska, Hawaii, Idaho, New Mexico, Utah and Wyoming) were in the West. Obviously, some similar factors would be in operation in these states: net inmigration, specific ethnic groups with high birth rates, and general population increases. The trend seemed to change in 1980, however, when Nevada, New Mexico, and Utah had decreasing birth rates, repeating a pattern noted in the 1970s: Thus, the upturn in the birth rate in Arizona may be unique among states in this area of the country, reflecting the positive influence of an expanding economy.

TABLE 6

PERCENTAGE DISTRIBUTION OF BIRTHS TO UNWED MOTHERS, BY MOTHER'S COUNTY OF RESIDENCE, ARIZONA, 1980

County of Residence	*Number*	*Percent*
ARIZONA	9,373	100.0
Apache	623	6.6
Cochise	188	2.0
Coconino	454	4.8
Gila	146	1.6
Graham	72	0.8
Greenlee	32	0.3
Maricopa	4,785	51.1
Mohave	100	1.1
Navajo	508	5.4
Pima	1,630	17.4
Pinal	422	4.5
Santa Cruz	72	0.8
Yavapai	85	0.9
Yuma	256	2.7

Source: Vital Records and Information Services, Arizona Department of Health Services.

TABLE 7

TOTAL BIRTHS, BIRTHS TO UNWED MOTHERS, AND PERCENTAGE DISTRIBUTION, BY ETHNIC GROUP, ARIZONA, 1980

Ethnic Group of Mother	*Total Births*	*Births to Unwed Mothers*	*Percent*
White (excluding Spanish)	29,226	2,979	10.2
Spanish-origin	13,891	3,590	25.8
Indian	4,510	1,985	44.0
Black	1,880	800	42.6
Asian	542	19	3.5
Total	50,049	9,373	18.7

Source: Vital Records and Information Services, Arizona Department of Health Services.

SUMMARY

The variations in birth rates among Arizona's counties and the factors that contribute to these differences are summarized in Table 8. Although the overall effect of these factors has been to maintain Arizona's birth rate at a level higher than that in the United States, and to produce an increase in the 1980 rate, each county has a unique population picture. In general, Arizona's rapid population growth reflects inmigration of families in the child-bearing and child-rearing years and an increasing birth rate among these families. Consideration of the effect of these population changes on future demands and needs for products, services, and facilities must include an understanding of the variations in growth patterns among segments of the state's citizens. The 1980 increase in birth rates occurred in

TABLE 8
BIRTH RATES FOR 1980, INFLUENCING FACTORS, AND FORECASTS FOR THE FUTURE, BY COUNTY, ARIZONA

County	*Birth Rate**	*Influencing Factors*	*Forecast for Future Birth Rates*
Apache	31.3	Indians, Mormons, large family size, unwed mothers	Increase
Cochise	18.3	Spanish, Catholics	Stable
Coconino	24.3	Indians, inmigration of young families	Increase
Gila	19.0	Indians, Spanish, inmigration of older persons, outmigration of younger persons	Decrease
Graham	22.4	Indians, Spanish, Mormons, large family size	Increase
Greenlee	23.8	Spanish, Catholics, Mormons	Stable
Maricopa	17.8	Spanish, Catholics, Mormons, unwed mothers, inmigration of young families	Increase
Mohave	15.7	Spanish, inmigration of older persons	Stable
Navajo	28.2	Indians, Mormons, large family size	Increase
Pima	16.8	Spanish, inmigration of young families, small family size, unwed mothers	Increase
Pinal	20.2	Indians, Spanish, Catholics	Increase
Santa Cruz	24.4	Spanish, Catholics	Increase
Yavapai	13.7	Inmigration of older persons, small family size	Stable
Yuma	20.4	Spanish, Catholics	Stable
ARIZONA	18.4	Indians, Spanish, Mormons, Catholics, inmigration of young families, increasing percetage of unwed mothers, delayed childbearing, decreasing marriage rate.	

*Per 1,000 estimated mid-year population.

Source: Birth rates from Vital Records and Information Services, Arizona Department of Health Services. Other information is summarized from the text.

only ten of the state's fourteen counties, indicating that factors influencing the population growth are not uniform and will affect businesses and government agencies in different ways, depending upon the population area or group served. Significant differences between counties due to age, race, and religion of the residents have been discussed.

Business leaders, planners, marketing managers, and development officers need to analyze the communities and markets they hope to reach. Government officials and service agencies should be familiar with the characteristics of the population groups they intend to contact. Understanding the differences between the needs of people in Mohave County and Pima County can be a valuable tool in designing appropriate strategies to meet those needs. Some factors of particular significance include the higher birth rate of Apache County, the influx of older residents to Mohave and Yavapai counties, the higher birth rate among certain ethnic and religious groups, the trend toward postponement of child-bearing, and the decreasing family size in some counties. This analysis of factors affecting birth rates and population growth in Arizona is aimed at providing data to assist in this process. By incorporating this information into long-range planning and decision making, providers of goods or services should be better prepared to target their products to appropriate segments of the population.

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[1] S. K. Happel and T. D. Hogan, "Birth Rate Trends: Implications for the Future," *Arizona Business*, 28 (November, 1980): pp. 3-10.

[2] Data on Arizona births and marriages were obtained from the Bureau of Vital Records and Information Services, Arizona Department of Health Services. Tony DiCampli, Supervisor of the Research and Statistical Analysis Section, provided the statistical tables and information.

[3] N. deGennaro, ed., *Arizona Statistical Abstract, 1979*, University of Arizona, Tucson. *Population Estimates of Arizona as of July 1, 1979*, Report Number 12, Arizona Department of Economic Security, Phoenix, January, 1981.

[4] Addendum to *Population Estimates of Arizona as of July 1, 1979*, Report Number 12, Arizona Department of Economic Security, Phoenix, June, 1981.

[5] *Fertility of American Women: June, 1979*, U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 358, U.S. Government Printing Office, Washington, D.C., 1980.

[6] *Foresight Eighty*, Western Savings and Loan Association, Phoenix, 1980.

[7] *Utah Vital Statistics, Annual Report 1978*, Utah Department of Health, Salt Lake City, November, 1980.

[8] *Foresight Eighty.*

[9] Vital Records and Information Services, Arizona Department of Health Services.

[10] *Monthly Vital Statistics Report, Advance Report, Final Natality Statistics, 1978*, DHHS Publ. No. (PHS) 80-1120, 29 (1 supplement), April 28, 1980.

[11] E. Spratley, *Birth and Fertility Rates for States and Metropolitan Areas*, Vital and Health Statistics, Series 21, Data from National Vital Statistical System, No. 27, DHEW Pub. No. (HRA) 78-1905, 1978.

[12] *Monthly Vital Statistics Report.*

An Update On Workmen's Compensation

CHARLES W. McGUIRE

Accidents have been a part of business since the industrial revolution, and by 1900, industrial accidents were at an all-time high in this country. Some employees were injured as a result of their employer's negligence in providing unsafe working conditions, but many other accidents were not due to any employer negligence, but, were simply unavoidable. Although the injured employee could recover damages from a negligent employer, negligence was difficult to prove and the litigation was timely and expensive. Even if the employee had a good claim, expense and delays often prompted acceptance of compromise for a fraction of full value.

Furthermore, because of several defenses available to the employer and the problems of litigation, the injured worker, without sufficient resources or time to pursue such a claim, would often forfeit an otherwise legitimate claim. To remedy this industrial dilemma, many states, including Arizona, enacted workmen's compensation practices and guidelines so that workers could be compensated for on-the-job injuries.

The purpose of this article is to provide a brief history and explanation of the Arizona Workmen's Compensation system and specifically provide an update by discussing the 1980 Senate Bill 1001, which marks a significant change in Arizona's workmen's compensation laws.

WORKMEN'S COMPENSATION THEORY

The ultimate aim of workmen's compensation is to provide wage benefits and medical care to the victims of work-related injuries. Workmen's compensation laws originated when industrial accidents increased, calling for an approach dismissing common-law remedies. The comprehensive design of workmen's compensation can be summarized as follows:

- An employee who is injured is automatically entitled to certain benefits.
- Fault is immaterial — the employee's contributory negligence does not lessen the right to compensation, and the employer's care and precautions do not lessen liability.
- Coverage is extended to employees only and not to independent contractors.
- Benefits include partial wages, hospital and medical expenses, and in some cases, death benefits.

In 1980, the Arizona legislature passed several amendments to the workmen's compensation law, which significantly changed the system. Included in the amendments were various procedural changes, a new section relating to heart cases, a new section relating to mental cases, and a new subsection relating to economic conditions and amount of recovery.

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- In exchange for the benefits indicated, the employee, his family and dependents give up their common law right to sue the employer for damages.
- If third parties are responsible for the accident, recovery from the third party goes first to the employer for reimbursement and the remainder to the employee.
- Administration of workmen's compensation is in the hands of an administrative agency (in Arizona it is the Industrial Commission).
- Each employer is required to secure his liability through insurance (either through the state or through private insurers).

The workmen's compensation laws apply to every person who employs any workers or operatives on a regular basis in the same business or establishment under contract for hire including the state, each county, town, municipal corporation, and school district. Originally, Arizona laws applied only to employers with three or more employees.

One type of coverage for workmen's compensation is insurance through the state compensation fund or through an authorized insurance carrier. Alternatively, coverage can be retained by furnishing to the Arizona Industrial Commission proof of financial ability to directly pay the amount of compensation when due. Insurance carriers are obligated to inform the Industrial Commission of any cancellation of the policy.

Injury in the course of employment must be reported to the commission, and the employee is entitled to certain statutory benefits. Payment for the employee's claim will be based upon a schedule of injuries and compensation. For example, loss of a thumb would require payment of 55 percent of the employee's average monthly wage for fifteen months. The claim amount of an unscheduled injury (one not listed in the statute) is determined by loss of earning capacity and must be established by other factors to determine a proper amount of disability payments. Death benefits are paid to surviving relatives in the event of a job-related death.

ARIZONA'S HISTORY OF WORKMEN'S COMPENSATION

Arizona's workmen's compensation law commenced in 1925 with the adoption of a constitutional amendment (Article 18, Section 8) which provided that the legislature would enact a workmen's compensation law covering the manual or mechanical labor force in all public employment and selected private employment. The law was to apply to any injury or accident arising out of or in the course of employment.

In accordance with the amendment, the legislature enacted a series of laws creating the Industrial Commission, whose initial function was to settle any disputed claims and act as insurer for employers for the payment of claims. The commission also made the initial determination as to the validity of the claim, although the worker was afforded an appeals procedure in the event a claim was denied.

The system remained relatively stable until 1969 when some fundamental changes were made including the division of the Industrial Commission into two bodies — the State Compensation Fund, which is the state insurance company, and the Industrial Commission, which is designed to be the court of exclusive jurisdiction over workmen's compensation laws. In addition, by allowing premium rates to be set by the insurance department rather than the Industrial Commission and permitting private insurance carriers to compete with the State Fund, the 1969 amendments brought the workmen's compensation system closer to an insurance system.

The amendments also expedited the processing of claims. The accident must be reported to the insurance carrier and to the commission within ten days after the employer has notice of an accident, and the carrier is to proceed immediately with payment without a determination by the commission. Payment or denial must occur within twenty-one days from the time the carrier is notified. The process of appealing a carrier's decision was also shortened. Rather than the commission making the decision on a claim, the hearing officer now makes the determination on the case, subject to right of appeal to the commission. Appeal may be taken when problems on amount of payment, changes in medical stability and carrier liability occur. In these situations, the employee, to preserve individual rights, must have filed a claim within one year from the time of the accident or have had payments commenced by an employer or carrier.

The upshot of the 1969 amendments was to perfect the processing of an increasing number of claims. The by-product, however, was the increasing number of claims for unscheduled injuries and for injuries that were questionably related to the workplace, such as heart attacks and stress. As a result Arizona's workmen's compensation premium costs measured against payroll became the second highest in the country and were growing at a rate of one and a half times the national average.

In reaction to the ever increasing costs and several courts' decisions broadening coverage, the legislature passed Senate Bill 1001 in 1980, which significantly changed the workmen's compensation system. Included in the amendments were various procedural changes; a new section relating to heart cases; a new section relating to mental cases; and a new subsection relating to economic conditions and amount of recovery.[1]

THE PROCEDURAL CHANGES

The first and most fundamental procedural change effected by the new law relates to filing deadlines. The time for filing a request for hearing was extended from sixty to ninety days, and the term "filed" was clarified by the legislature to mean the claim was in the possession of the Industrial Commission. The ninety-day filing period was not to be extended except in unusual circumstances such as insanity or incapacity. The legislature emphasized the absolute finality of such deadlines as a response to previous court decisions that had waived the deadlines.

The second procedural change related to the one-year time limit for filing a claim with an insurer. According to the amendment, the time begins to run when the employee knows or should know that a compensable injury has been sustained. Again, only in exceptional circumstances can the one-year filing deadline be extended.

The bill also provided for a new evidentiary standard with regard to hernia injuries. Traditionally, hernias were presumed to be nontraumatic and limited to two months' benefits. However, in *Figuero v. Industrial Commission*,[2] the Supreme Court declared that all hernias would be presumed real traumatic hernias compensable on the basis of reduced earning capacity rather than as a scheduled injury. The amendment redefines the traditional view and provides further that the burden of proof is on the employee to establish by a "preponderance of evidence" that the hernia is a real traumatic hernia. Thus, the employee must produce some evidence of trauma which overcomes or is not controverted by other medical evidence or authority.

Another procedural change dealt with an employee's right to sue a coemployee for negligence for a work-related injury. Such suits are prohibited under a constitutional amendment that was passed in November, 1980. Except in certain medical malpractice actions, employee suits against other employees for work-related injuries are prohibited.

THE HEART AMENDMENT

Workmen's compensation cases involving heart attacks or heart disease have been significantly difficult because the injury must be an accident arising out of and in the course of employment. Many heart-related injuries are sudden and brought about by a specific event; yet many others are the result of stress buildup and other factors over time. Prior to the 1980 amendments there were no legislative guidelines, and medical opinion differed on whether the heart problem was caused by the employment situation.

The consequence was that the courts, in the absence of such guidelines, developed their own tests for determining whether or not heart injuries were compensable. The Arizona Supreme Court adopted its test in *Thiel v. Industrial Commission*[3] in 1965, when the widow and children of a heart attack victim brought a workmen's compensation action to collect death benefits. The employee, who worked long and hard hours, but who also did not follow his physician's advice concerning smoking, drinking, and other physical activities, died of a heart attack at age thirty after a visit to a friend's home on Sunday evening. Medical experts testified that he would have lived longer if he had been involved in a less stressful job.

In ruling in favor of the family, the court held that the conditions of employment need be only "a" cause of the heart attack and need not have been the "sole" cause of the heart attack, as long as it could be established that the employment conditions contributed to and accelerated the heart attack.

The Arizona Court of Appeals, after following the Supreme Court's test in the *Thiel* case,[4] modified it in part in *Stotts v. Industrial Commission*.[5] In that case a custodian who was lifting heavy garbage cans at work suffered a heart attack. In denying benefits, the court noted that medical testimony labeled the activity "not unusual" and commented on the state of heart cases in workmen's compensation:

> The courts are thus faced with a dilemma! They bind themselves to follow medical opinion as to causation in heart attack cases . . . . The result has been a hodgepodge of decisions where compensation has been granted under one set of facts and denied under similar facts . . . . We cannot help but wonder whether the industrial heart attack area is not a proper subject for definitive legislation, so as to bring some order out of the chaos which has resulted from the present statutes and decisions in this crucial area of our workmen's compensation laws.[6]

Finally, with the 1980 amendments, a heart-related injury is defined and is compensable only if "some injury, stress or exertion related to the employment was a substantial contributing cause" of the injury. Thus, the standard has shifted from "sole" cause to "a" cause to "substantial" cause. The new standard should result in more precise medical testimony even though each case will differ, but establishing "substantial" will be a more definitive chore than establishing "sole" or "a contributing cause." The language also conforms to the standards of proof in negligence cases which offers precedent and also allows medical experts to work with a familiar standard.

The legislature also limited the liability for heart-related injuries. The only employer liable for such injury is the last employer, not any previous employers.

MENTAL CASES

Next to heart cases, the workmen's compensation cases involving claims for stress or mental disease arising from employment were causing the greatest controversy. As evidence of the increasing number of claims in the mental area, in California between 3,000 and 4,000 psychiatric injury claims are filed each year and about half the claimants receive benefits ranging between $1,400 and $1,900.[7] The secretary who felt overly criticized, a sales clerk forced to work late nights, and the patrol officer depressed because of having to cruise a quiet, rural area — all were allowed workmen's compensation benefits.

The Arizona courts have recently been liberal in their interpretation of "arising out of and in the course of employment" in the mental injury cases. However, the history of such cases indicates that this liberalism developed with time. In *Phelps Dodge Corp. v. Industrial Commission*[8] an employee caught in a gaseous explosion and forced to run for clean air later became neurotic about fear of injury and ailments which might result from the experience. In denying recovery for the neurosis, the court stated that although the injury arose out of the accident, there was no proof that the neurosis was the result of the injury.

In a later case, *American Smelting and Refining Co. v. Industrial Commission,*[9] a miner, after receiving medical treatment and resting for four days because of injuries sustained when rocks fell on his shoulders, became slowly paralyzed about the neck and shoulders and eventually became fully paralyzed. In granting compensation the court stated that nervous shock was an injury and neurosis is a disease resulting from that injury.

The early cases permitted recovery in circumstances where there was an accident and some physical injury. Later cases began permitting recovery for an exclusively mental injury. In *Fireman's Fund Insurance Co. v. Industrial Commission,*[10] an employee who was continually given new accounts and more and more responsibility suffered an unanticipated mental breakdown. During this time she was also experiencing marital problems and her mother had just recently passed away. In allowing recovery, the Arizona Supreme Court held that physical injury was not necessary for recovery. Further, the court found the injury to be accidental in that it was "unexpected" i.e., the result of the delegation to her of excessive responsibilities resulted in the unexpected — her mental breakdown.

The Supreme Court has held that not every emotional stress case is compensable, since some job stress is usual, ordinary, and not unexpected. The resulting confusion in the judicial decisions effected a redefinition of mental injury in the 1980 amendments. Under the new law a mental injury is not considered an accident and is not compensable unless there is some unexpected, unusual or extraordinary stress related to the job. Moreover, even if the stress is shown to be job-related, the employee must still establish that the stress was a "substantial contributing cause" of the mental injury. As with heart cases, an employee can recover only from the present employer.

The effects of this amendment should be to restrict the types of cases in which recovery for mental stress will be permitted. In addition, evidence of other stressful events will be permissible in establishing whether the substantial-effect test is met.

ECONOMIC CONDITIONS AND AMOUNT OF RECOVERY

Prior to the 1980 amendments, two major problem areas existed regarding the amount of the injured employee's claim. The first area was that of prior injuries. Again, the court apparently dealt with the situation in a manner that did not follow legislative intent. In successive injury cases in which the employee had a prior scheduled injury, the courts treated the second injury as unscheduled for purposes of determining the amount of the award. Under the 1980 amendments, if a current scheduled injury was preceded by a permanent disability, there is a presumption that the injury is unscheduled unless the employee can prove that his prior earning capacity was not affected. If the previous disability did not result in a loss of earning capacity, then there is a presumption that the current injury is scheduled. If the prior injury was industrial, then factors such as age, education, time between injuries, wages and performance can be examined to rebut the presumption. If the prior injury was nonindustrial, then the effect on earning capacity and performance can be considered.

The effect of these provisions is to make it less expensive for employers to hire handicapped employees since prior injuries are now a factor in determining award amounts in light of the employee's true earning capacity rather than an amount determined without consideration of injury.

The second major issue was whether evidence concerning economic conditions and the job market could be considered in determining the amount of the award. It appeared that 1969 law permitted the consideration of such evidence, but the Supreme Court, in *Wiedmaier v. Industrial Commission*[11] held that the Industrial Commission may not consider economic conditions in determining the amount of lost earnings. The court held that the commission's award based on alternative employment to an injured carpenter unable to work because of scarce opportunities was incorrect.

However, the 1980 amendments now provide that evidence regarding economic conditions is admissible to determine loss of earning capacity. One recent economic change increased the maximum average wage for the computation of compensation benefits from $1,250 to $1,325 per month. The resulting maximum monthly benefit would be raised from $833.25 to $883.25.

CONCLUSION AND EXPECTATIONS

Some convincing reasons have been advanced for Arizona's second highest workmen compensation premium rate in the country (when measured against payroll). The recent string of case decisions contrary to legislative intent imposed burdensome standards of proof on employers, lessened burdens of proof for employees, and encouraged new types of claims such as heart and mental injury cases.

In response, the 1980 amendments redefine the legislative intent, overrule some Arizona court decisions, and may eventually cut back employer's costs. The amendments represent a milestone in the struggle between the courts and legislature. The legislature, in answer to requests from the court, was able to grasp some problem areas and improve the system of Arizona's workmen compensation.

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[1] See generally Arizona Revised Statutes, Title 23, Chapter 6.

[2] 543 P.2d 785 (1976).

[3] 494 P.2d 711 (1965).

[4] *Hume v. Industrial Commission*, 494 p.2d 37 (1972); *State Compensation Fund v. Keefe*, 526 P.2d 1266 (1974); *McNeely v. Industrial Commission*, 501 p.2d 555 (1972).

[5] 488 P.2d 495 (1971); see also *City of Phoenix v. Industrial Commission of Arizona*, 585 P.2d 257 (1978).

[6] 488 P.2d 495, 498.

[7] *Wall Street Journal*, September 17, 1980, Section 2, p. 1.

[8] 49 P.2d 391 (1935).

[9] 123 P.2d 163 (1942).

[10] 579 P.2d 555 (1978).

[11] 589 P.2d 1 (1979).

Phoenix Cost of Living: An Evaluation and Comparison

ROBERT T. KEIM

The Urban Family of Four Budget (UFFB) is frequently used both to indicate changes in cost of living for major cities and to compare the cost of living among various cities. In making such comparisons, however, it is essential that the methodology used for the studies be the same. The purpose of this article is to update the Phoenix Urban Family of Four Budget using the same methodology as that used by the federal government and then to compare Phoenix cost of living with other cities.

Since 1968 the Bureau of Business and Economic Research (BBER) at Arizona State University has collected cost of living data via direct pricing. These data were accumulated according to methodology developed by the Bureau of Labor Statistics (BLS) as described in Bulletins 1570-1 and 1570-3 (Autumn, 1966), and were reported as the budget necessary to maintain a moderate standard of living for a family of four in the Phoenix area.

Until 1979 the Phoenix budget was compared with data reported by the Bureau of Labor Statistics for twenty-four other cities across the country. In the mid-1970s, the Phoenix budget began increasing at a rate faster than the national average. Initially, researchers attributed the increased rate to problems associated with the fast growth of the Phoenix metropolitan area. Closer analysis of the BLS data, however, revealed that other fast growing areas were not increasing at the accelerated rate experienced in Phoenix. This discrepancy was also noticed by the University of Arizona's Division of Economic and Business Research which, since 1977, has collected Tucson budget data. In particular, other Sun Belt cities were experiencing budget increases at or below the national average. Investigation showed that because of differences in methodology, accurate comparisons of the Arizona cities with other cities were not possible. While the Phoenix and Tucson budgets priced goods directly in the stores, the BLS studies updated pricing using the Consumer Price Index. The methodology for the Phoenix area included the direct pricing of over 400 consumer goods and services and developing a dollar amount for consumption of a prescribed mix of these goods and services. After the consumption amount was determined, the total

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As with any statistical measure, cost of living data can vary according to the methodology used. This article updates the Phoenix Family of Four Budget using the method that the Bureau of Labor Statistics uses for twenty-four other cities, thus enabling comparisons to be made. In this revision, the Phoenix Urban Family of Four Budget is $21,844, ranking Phoenix in twenty-second place. This study was done by the Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cosponsorship with Valley National Bank.

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budget was developed by adding the federal, state and Social Security taxes to be paid on an income level equal to the total budget for this mythical family of four.

In both Phoenix and Tucson, the total budget amounts were above the national average and the two cities were quickly moving to the top of the list when compared with budgets of the twenty-four cities as reported by the Bureau of Labor Statistics. Those figures and the national average are reported each April by the BLS, which states that their budgets have been updated using the Consumer Price Index (CPI) since 1969 when the last direct pricing took place. Thus, the differences in these two methods precludes the accurate and valid comparison of results.

A recent study, however, has made it possible to revise the budget in a manner more comparable with the Bureau of Labor Statistics methodology. This study was sponsored by Valley National Bank and conducted by the Bureau of Business and Economic Research, College of Business Administration at Arizona State University.

The availability of the previous directly priced budgets, along with the CPI updated budgets developed in this study will provide a unique opportunity to compare and contrast the alternate methods of collecting, developing and reporting cost of living data.

DIRECTLY PRICED BUDGETS

The goods and services priced in the budgets, specifications describing each item, and the quantities consumed by this mythical family were set by the BLS, and were based on consumer expenditure surveys done in the early 1960s. The makeup of the budget has not changed over the years nor have substitutions been introduced to reflect changing patterns of consumer spending.

The budget figures are determined for a family of four that includes a 38-year-old husband employed full time, a wife not employed outside of the home, a 13-year-old son, and an 8-year-old daughter. The family is assumed to be well established in the community and in good health. The couple has been married fifteen years and the husband is an experienced worker in his field. The family has accumulated an average inventory of home furnishings, clothing, major durables, and other items. Three-fourths of the families are assumed to be homeowners with mortgage payments on a house purchased eight years earlier. The remaining families, twenty-five percent, are renters.

CPI UPDATED BUDGETS

The figures developed in this study started with the 1969 directly priced budgets for the Phoenix metropolitan area. Since the BLS also direct priced in 1969, the 1969 Phoenix budget is comparable to the budgets compiled for other cities by the BLS. Based upon an internal BLS note which explains the methodology that was used to develop the budget figures for twenty-four other cities since 1970, these figures were updated to produce the consumption figures for 1970 through 1980.

This methodology involves the application of inflation rates measured by specific CPI categories to the appropriate UFFB categorical dollar amounts. For instance, if the personal care CPI category measured an increase of 8 percent in a given year, and the budget for personal care in the UFFB the previous year was $500, the new personal care budget would be $540. The breakdown of the Phoenix data to the level of detail

TABLE 1

URBAN FAMILY OF FOUR BUDGET
METROPOLITAN PHOENIX

Comparison of CPI Updated Versus Directly
Priced Budget Data for 1980

	CPI Updated Budget	*Directly Priced Budget*	*Directly Priced as a Percent of CPI Updated*
TOTAL BUDGET	$21,844	$24,402	111.7
TOTAL FAMILY CONSUMPTION	16,539	18,167	109.8
Food	5,481	5,756	105.0
Housing	4,497	5,374	119.5
Transportation	2,155	2,474	114.8
Clothing	1,224	1,514	123.7
Personal Care	560	630	112.5
Medical Care	1,434	1,406	98.0
Other Family Consumption	1,188	1,010	85.0
OTHER COSTS[a]	858	868	101.2
TAXES	4,447	5,367	120.7
Social Security	1,339	1,496	111.7
Federal Income Tax	2,703	3,326	123.0
State Income Tax	405	545	134.6

[a] Other Costs include life insurance premiums, occupational expenses, gifts and contributions.

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University in cosponsorship with Valley National Bank.

prescribed by the BLS explanatory note was not possible in all budget categories since a history of this detail is not available in the Phoenix area. However, every attempt was made to make these figures as comparable to the BLS figures as possible.

Since taxes are not indexed in the Consumer Price Index, the consumption figures (Total Family Consumption plus Other Costs) were computed first. After determining the dollar amount necessary for consumption, the next step was to determine the Total Budget amount necessary for the family to pay actual federal, state and Social Security taxes on this amount.

RESULT OF THE CPI UPDATING

Using the CPI updating, the 1980 Urban Family of Four Budget for the Phoenix metropolitan area at the intermediate level is $21,844. The individual budget components are presented and compared to the directly priced budget in Table 1. For most budget categories the directly priced data is higher than the CPI updated figures.[1]

The total budget, as compared with the twenty-four BLS cities, is presented in Table 2. This comparison ranks Phoenix in twenty-second place between St. Louis

TABLE 2

URBAN FAMILY OF FOUR BUDGET
METROPOLITAN PHOENIX

Comparative Living Costs: 1969 and 1980
Metropolitan Phoenix and Twenty-Four Other Metropolitan Areas

Area	*1969 Budget and Rank*	*1980 Budget and Rank*	*1969-1980 Dollar Increase*	*1969-1980 Percentage Increase*	*Percent of 1980 Urban U.S. Average*
Urban United States Average	$10,279	$23,134	$12,855	125.1	100.0
Honolulu	12,118 (1)	28,488 (1)	16,370	135.1	123.1
Boston	11,253 (2)	27,029 (2)	15,776	140.2	116.8
New York	11,247 (3)	26,749 (3)	15,502	137.8	115.6
Washington, D.C.	10,390 (10)	25,203 (4)	14,813	142.6	108.9
San Francisco-Oakland	10,837 (4)	24,704 (5)	13,867	128.0	106.8
Philadelphia	10,221 (12)	24,364 (6)	14,143	138.4	105.3
Milwaukee	10,739 (6)	24,028 (7)	13,289	123.7	103.9
Buffalo	10,747 (5)	23,995 (8)	13,248	123.3	103.7
Minneapolis-St. Paul	10,191 (13)	23,630 (9)	13,439	131.9	102.1
Cleveland	10,470 (8)	23,429 (10)	12,959	123.8	101.3
Seattle	10,553 (7)	23,392 (11)	12,839	121.7	101.1
Baltimore	9,898 (18)	23,389 (12)	13,491	136.3	101.1
Chicago	10,452 (9)	23,387 (13)	12,935	123.8	101.1
Detroit	9,949 (17)	23,168 (14)	13,219	132.9	100.1
Denver	9,737 (19)	22,813 (15)	13,076	134.3	98.6
San Diego	9,979 (16)	22,727 (16)	12,748	127.7	98.2
Cincinnati	9,736 (20)	22,681 (17)	12,945	133.0	98.0
Kansas City	10,034 (14)	22,504 (18)	12,470	124.3	97.3
Los Angeles-Long Beach	10,247 (11)	22,500 (19)	12,253	119.6	97.3
Pittsburgh	9,684 (22)	22,492 (20)	12,808	132.3	97.2
St. Louis	10,019 (15)	22,248 (21)	12,229	122.1	96.2
PHOENIX	9,731 (21)	21,844 (22)	12,113	124.5	94.4
Houston	9,176 (24)	21,572 (23)	12,396	135.1	93.2
Atlanta	9,117 (25)	21,131 (24)	12,014	131.8	91.3
Dallas	9,340 (23)	20,766 (25)	11,426	122.3	89.8

Source: Metropolitan Phoenix data compiled by the Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperative cosponsorship with Valley National Bank; other data from the U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

($22,248) and Houston ($21,572). In 1969, the Phoenix directly priced budget of $9,731 ranked twenty-first between Cincinnati ($9,736) and Pittsburgh ($9,684).

The yearly budgets for 1970 through 1980, updated by the CPI components applied to the 1969 base, are presented in Table 3; the directly priced budgets for these years are presented in Table 4.

Table 5 presents the twelve years of CPI updated budgets for the Phoenix metropolitan area as compared to the United States Urban Average. Also included in this table is the ranking that Phoenix would have had when compared to the twenty-four other BLS cities. Throughout these twelve years Phoenix's lowest rank of eighteenth was in 1978 and the highest rank of twenty-second was in 1970, 1975, 1976, 1977 and 1980. This narrow range of variation is consistent with the original hypothesis of this study — that the increasing rank could be explained by the difference in methodologies between the direct pricing of the Bureau of Business and Economic Research and the CPI updating utilized by the Bureau of Labor Statistics, U.S. Department of Labor.

CONCLUSION

This study confirms that the methodologies used in developing and reporting cost of living studies can have a great impact on final figures. Although not completely comparable with the BLS methodology, the variation of this study with the nationally reported figures is much smaller than the directly priced budget data.

These differences indicate that the UFFB cost of living figures must be interpreted with caution. The fact that two similar methodologies can present different results and that the methodology of the study is relatively outdated suggests that the study should only be used as an indicator of the relative costs of living.

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[1] For a more complete discussion of the components and makeup of the Urban Family of Four Budget, see Robert T. Keim and Susan B. Swirsley, "Phoenix Family Budget: 1980," *Arizona Business*, May, 1981, pp. 19-24.

TABLE 3

URBAN FAMILY OF FOUR BUDGET
METROPOLITAN PHOENIX

Dollar Amounts Derived from 1969 Direct Pricing Updated Yearly Through 1980 Using CPI

	1969	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*
TOTAL BUDGET	$9,731	$10,184	$10,597	$10,912	$12,185	$13,360	$14,222	$14,915	$16,321	$18,215	$19,862	$21,844
TOTAL FAMILY CONSUMPTION	7,645	8,004	8,410	8,687	9,519	10,279	11,000	11,488	12,605	13,913	15,271	16,539
Food	2,374	2,430	2,443	2,602	3,067	3,360	3,659	3,597	3,974	4,452	4,909	5,481
Housing	2,299	2,380	2,447	2,507	2,645	2,855	3,021	3,281	3,646	4,004	4,405	4,497
Transportation	867	897	1,044	1,037	1,164	1,224	1,280	1,376	1,510	1,630	1,904	2,155
Clothing	780	809	802	809	878	938	969	1,039	1,136	1,225	1,222	1,224
Personal Care	252	275	267	278	302	349	359	381	410	463	501	560
Medical Care	452	602	703	742	747	773	891	950	1,011	1,123	1,288	1,434
Other Family Consumption	621	613	704	711	716	781	820	864	918	1,017	1,072	1,188
OTHER COSTS	504	515	529	536	559	585	614	629	662	711	785	858
TAXES	1,582	1,665	1,657	1,689	2,107	2,496	2,608	2,798	3,054	3,591	3,806	4,447
Social Security	374	374	406	468	632	772	825	873	955	1,071	1,218	1,339
Federal Income Tax	1,208*	1,158	1,099	1,054	1,258	1,459	1,469	1,576	1,668	2,086	2,239	2,703
State Income Tax		133	152	167	217	265	314	349	431	434	349	405

*Original breakdown of 1969 state and federal taxes using Indexed Budget was not available.

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University in cosponsorship with Valley National Bank.

TABLE 4

URBAN FAMILY OF FOUR BUDGET
METROPOLITAN PHOENIX
Dollar Amounts Based on Direct Pricing
1969-1980

	1969	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*
TOTAL BUDGET	$9,731	$10,226	$10,470	$10,847	$12,151	$13,969	$15,060	$16,047	$17,972	$19,858	$22,362	$24,402
TOTAL FAMILY CONSUMPTION	7,645	8,004	8,308	8,629	9,490	10,750	11,699	12,423	13,785	15,085	16,858	18,167
Food	2,374	2,452	2,448	2,622	3,108	3,428	3,743	3,890	4,283	4,842	5,274	5,756
Housing	2,299	2,369	2,442	2,525	2,640	3,118	3,431	3,688	4,260	4,722	5,217	5,374
Transportation	867	897	1,042	1,033	1,164	1,246	1,495	1,646	1,754	1,880	2,200	2,474
Clothing and Personal Care	1,032	1,130	1,120	1,147	1,253	1,498	1,473	1,559	1,684	1,751	2,021	2,144
Medical Care	452	528	606	638	644	702	758	829	962	1,039	1,234	1,409
Other Family Consumption	621	628	650	664	681	758	799	811	842	851	912	1,010
OTHER COSTS	504	517	527	539	568	612	645	675	717	766	823	868
TAXES	1,582	1,705	1,635	1,679	2,093	2,607	2,716	2,949	3,470	4,007	4,681	5,367
Social Security	374	374	406	468	632	772	824	895	965	1,071	1,371	1,496
Personal Income	1,208	1,331	1,229	1,211	1,461	1,835	1,892	2,054	2,505	2,936	3,310	3,871

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University in cosponsorship with Valley National Bank.

TABLE 5

URBAN FAMILY OF FOUR BUDGET
METROPOLITAN PHOENIX
Comparison of Phoenix Versus U.S. Urban Average and Phoenix Rank Among Other Cities

Year	*Urban Average*	*Phoenix Average*	*Dollar Difference*	*Percent of Urban U.S. Average*	*Phoenix Rank Among 25 Cities*
1969	$10,064	$ 9,731	$ 333	96.7	21
1970	10,664	10,184	480	95.5	22
1971	10,971	10,597	374	96.6	20
1972	11,446	10,912	534	95.3	21
1973	12,626	12,185	441	96.5	20
1974	14,333	13,360	973	93.2	21
1975	15,318	14,222	1,096	92.8	22
1976	16,236	14,915	1,321	91.9	22
1977	17,106	16,321	785	95.4	22
1978	18,622	18,215	407	97.8	18
1979	20,517	19,862	655	96.8	21
1980	23,134	21,844	1,290	94.4	22

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University in cosponsorship with Valley National Bank.

The Arizona Business Scene

Cost of Living Studies: Observations and Comparisons

A true cost of living study is useful for several purposes: to allow an individual or family to compare its expenses against a norm; to measure inflation; and to determine differences in living expenses in different cities. The latter purpose is the most common, especially in Arizona, because of its significant levels of inmigration from all parts of the country.

The Consumer Price Index (CPI) is not a cost of living index, though it is commonly referred to as such. The CPI is actually a price index, and while it can be used as a measure of inflation, it cannot be used as a cost of living index.

There are several significant differences between a cost of living index and a price index:

- A cost of living index includes a comprehensive list of expenditures, whereas a price index excludes income taxes and certain other items, such as life insurance and contributions.
- A cost of living index adjusts the relative importance of items included in the index on an ongoing basis to match changes in consumer expenditure patterns. A price index makes only periodic revisions to a fixed market basket.
- A cost of living index expresses expenditures in dollar values, but a price index can only measure percent changes.

Perhaps the best known cost of living study is the Urban Family of Four Budget (UFFB) performed by the federal government. An adjunct to this study for retirees is the Retired Couple's Budget. Although the Department of Labor does this study in twenty-four cities across the country, neither Phoenix nor Tucson is included. In order to fill this void, the study is done for these cities, according to the government specifications, by Arizona State University and the University of Arizona. As discussed in another article in this issue of *Arizona Business*, however, there are several shortcomings to this study.[1]

A limited number of other cost of living studies exist, some performed by private corporations that do not make all of their findings public. The most comprehensive of these other studies that is available to the public is conducted by the Chamber of Commerce Researchers Association (CCRA). This is a voluntary study performed by local chambers of commerce, including those of both Phoenix and Tucson. The study is done quarterly by over 200 cities and towns, though many large cities do not participate. It does not fit the requirements of a true cost of living study, however, because taxes are not included and because a cost of living in dollars is not presented.

Some general findings about the cost of living can be derived from these various studies, particularly the UFFB and CCRA studies. The overall cost of living does vary by city size, with nonurbanized areas having the lowest costs of living and very large metropolitan areas having the highest costs of living. This relationship between expenses and city size varies with the type of expenditure: there is relatively little difference in food, transportation, clothing, and utility costs between large

TABLE 1
COST OF LIVING INDEXES FOR SELECTED MAJOR CITIES
(NATIONAL AVERAGE = 100)

City	*UFFB*[1]	*CCRA*[2]	*AIR, Inc.*[3]	*Runzheimer & Co.*[4]	*Employee Transfer Co.*[5]
Anchorage	128	—	—	—	—
Albuquerque	—	98	—	—	—
Atlanta	91	—	94	—	—
Baltimore	101	104	—	—	—
Birmingham	—	98	—	—	88
Boston	117	—	113	—	109
Buffalo	104	101	—	106	—
Chicago	101	—	105	114	100
Cincinnati	98	104	—	—	90
Cleveland	101	—	100	—	—
Columbus	—	103	—	—	88
Dallas-Ft. Worth	90	97	—	102	—
Detroit	100	109	101	—	—
Denver	99	107	96	—	—
El Paso	—	100	—	96	—
Honolulu	123	—	—	119	—
Houston	93	107	97	—	89
Indianapolis	—	100	—	97	—
Kansas City	97	98	—	—	—
Los Angeles	97	—	110	—	107
Louisville	—	98	—	—	89
Miami	—	—	95	107	—
Milwaukee	104	—	—	—	—
Minneapolis-St. Paul	102	—	107	—	104
Nashville	—	99	—	96	—
New Orleans	—	—	94	94	—
New York	116	132	119	121	123
Philadelphia	105	—	100	—	105
Phoenix	94	103	89	100	94
Pittsburgh	97	—	98	—	100
Portland	—	106	—	—	—
Sacramento	—	104	—	107	—
St. Louis	96	99	91	—	—
Salt Lake City	—	104	—	—	91
San Diego	98	113	—	—	—
San Francisco	107	—	112	130	—
Seattle	101	—	92	99	—
Stamford	—	127	108	—	118
Tucson	—	102	—	—	—
Washington	109	—	108	—	111

Sources: [1] UFFB (Urban Family of Four Budget): United States Department of Labor, *Bureau of Labor Statistics News*, April 22, 1981.

[2] American Chamber of Commerce Researchers Association, *Index Report*, Fourth Quarter, 1980.

[3] Associates for International Research, Inc., Cambridge, Massachusetts, Executive Living Costs in the United States, October, 1980.

[4] Runzheimer & Company, published in "Costs of Living," *Wall Street Journal*, May 5, 1980.

[5] Employee Transfer Company, published in "Living Costs Are Surveyed," *Arizona Republic*, March 11, 1981.

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and small cities, but there is a significant difference in housing, health care, taxes, and miscellaneous other expenses between large and small cities.

There is also a significant relationship between the cost of living and geographical regions of the country. The West Coast (California, Oregon, Washington) and Northeast (New York and the New England states) regions of the nation have the highest overall costs of living. The Middle Atlantic states (Virginia, Pennsylvania, Maryland, New Jersey, Delaware) are also above the national average. The costs of living in all other regions of the country are slightly below the national average, with little difference between regions, though some of the southern states appear to have the lowest living costs in the nation. This geographical pattern also varies by the type of expenditure:

- Food costs vary little across the country, though the Northeast is slightly more expensive and the South slightly less expensive.
- Homeownership costs (excluding utilities) vary significantly by region, with the West Coast by far the most expensive, followed by the Northeast and the Rocky Mountain states (Arizona, New Mexico, Colorado, Utah, Idaho, Wyoming, Montana).
- Utility costs vary even more greatly by region, with the Northeast and Mid-Atlantic states the most expensive and the West and Mountain states the least expensive.
- Total housing costs (homeownership and utilities) are thus the greatest in the Northeast and also above average in the West; these costs are the least in the South and South Central (Texas, Oklahoma, Arkansas, Louisiana) states.
- Transportation costs vary little across the country, although the Northeast and West regions are slightly higher.
- Health care is very expensive in the Western region and relatively inexpensive in the North central region (North and South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri) and in the South.
- The highest overall taxes are in the Northeast and Mid-Atlantic regions; lowest taxes are the South and South Central.

In Arizona, cost of living information is available for both Phoenix and Tucson. Since no study has been done in any other part of the state, it is not clear if the national relationship between cost of living and city size holds in Arizona where long distances between towns may add to certain costs. Overall, both Phoenix and Tucson are quite near the national average cost of living, but less than the average for larger cities. The cost of living in metropolitan Phoenix is slightly greater than in Tucson, which is not surprising given the difference in population. Food costs in Arizona are slightly below the national average, as are utility costs. Homeownership expenses are near the average for large cities, but health care and miscellaneous other expenses are greater in Phoenix and Tucson than in the average of other large cities.

A comparison of the overall cost of living in Phoenix and Tucson with other metropolitan areas is presented in Table 1. Index values rather than dollars are shown, because dollar values are either not available or not comparable among the various studies. Each of these cost of living studies has different assumptions and limitations that create variations in the index values for any given city. The following general conclusions about specific cities are based on information from all five indexes. In making these conclusions, the researchers discounted any study of a city that shows widely different results from other studies of that city.

- Cities in the Northeast and Middle Atlantic regions such as New York, Stamford, Boston and Washington, D. C. are the most expensive places in the United States.
- Cities on the West Coast, including Los Angeles, San Francisco, San Diego, and Sacramento, are nearly as expensive.
- The least expensive cities are in the South and South Central states: Atlanta, New Orleans, Louisville, Birmingham, Houston, and Dallas, for example.

The cost of living is only one part of a larger concept termed the "standard of living." The standard of living compares the cost of living to wage and salary levels; it also includes a measure of how this relationship is changing over time. Thus, the current inflation rate, such as that measured by the Consumer Price Index, is also a consideration in the standard of living. While Phoenix and Tucson now have a cost of living comparable to that of the national average, each city has had an inflation rate greater than the national average in the last three to four years. Should these higher than average inflation rates continue, Phoenix and Tucson will become relatively more expensive cities.

Wage and salary levels are just as important as the cost of living in determining the standard of living. A city with a high cost of living can have a good standard of living if wage and salary levels in that city are comparatively high. Thus, an expensive city can have a better standard of living than an inexpensive city with very low wages. The standard of living, however, is difficult to assess; this will be the topic of a future "Arizona Business Scene."

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[1] An additional criticism of this study is that it is geographically biased, when compared to other cost of living studies. Western cities are shown to be far less expensive in the UFFB, a factor that relates largely to homeownership costs.

A Survey of Arizona Business Conditions

HAROLD FEARON

The Arizona economy turned in a lackluster performance in June, according to results from the monthly business survey of the Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona. Both new orders received and employment decreased slightly and production enjoyed only a very small increase. Evidently the state's economy is feeling the influence of the same negative factors that are currently depressing national economic growth.

The purchasing business survey now is in its nineteenth year of consecutive monthly reporting on the current status of the Arizona economy. Data are gathered through a questionnaire sent at the close of each month to purchasing managers throughout the state, asking them to indicate the direction of activity — higher, unchanged, or lower — on six key indicators of economic activity in the month just ended. Since these purchasing managers deal daily with the forces of supply and demand, they are in a prime position to provide timely and accurate information on current business trends, thus enabling economic turning points to be spotted.

Prices paid for major purchased items continued their upward course in June and at a somewhat higher rate than in all but the first month of 1981. Yet, the increased rates in 1981 have been well under those registered in most months of the previous three years, showing that some progress is being made in moderating the rate of inflation. Fifty-seven percent of the purchasing managers said their firm paid higher prices in June compared to May; 38 percent saw prices unchanged; while 5 percent enjoyed an overall price decrease.

Delivery time on shipments from vendors continued to stretch out at a rate consistent with the previous several months. Longer delivery times were reported by 24 percent of the firms; 13 percent got faster vendor service. This provides further evidence that the economy is operating well below its potential capacity.

Inventory levels of purchased materials dropped again, for the fourth month in a row, although the decreases have been fairly minor. Inventory reductions were reported by 35 percent of the firms, compared to the 27 percent that increased stocks. Arizona firms appear to have inventories well under control, and they are in line with operating rates.

New orders received from customers dropped in June, although the decrease was minor. The 31 percent reporting an increase in new order receipts was exceeded slightly by the 35 percent who saw fewer new orders. Demand continues to be relatively soft, and the Arizona economy is marking time as we go into the summer months.

Production also was essentially flat in June, as the 29 percent of the firms who increased output was almost matched by the 27 percent who cut production. This

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increase rate is much smaller than that enjoyed in the earlier months of the year, but it is in line with the decreased new order rate.

Employment in Arizona firms slid somewhat in June, with 22 percent of the firms adding employees, compared to the 24 percent who reduced their work force. Employment has remained relatively stable so far in 1981, with only minor increases or decreases shown in each of the past six months.

The Arizona economy has experienced a relatively slow rate of growth over the first half of the year. With a continuation of the very high interest rates, it is likely that only moderate growth will be registered over the balance of the summer.

The results of the June purchasing survey are shown in Table 1.

TABLE 1

JUNE PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (June compared to May)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	57	38	5
Delivery time from vendors	24	63	13
Purchased materials inventory level	27	38	35
New orders received	31	34	35
Production	29	44	27
Employment	22	54	24

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

ARIZONA SALES OF ELECTRICAL POWER

By Month in Millions of KWH*

Current Month:	*Actual:*		*Percent Change Current Month From:*	
	1981	*1980*	*Same Month, Previous Year*	*Previous Month*
April	2470.1	2514.0	-1.7	+ 2.3
May	2656.7	2338.7	+ 13.6	+ 7.6

* Based on reports from major suppliers.

Arizona Construction Activity: Quarterly Report

JAY Q. BUTLER

FIRST QUARTER, 1981

Despite surging interest rates and a sluggish economy, construction activity produced a relatively good level of performance during the initial quarter of 1981. Contrary to previous quarters, the residential sector posted an increase while the commercial and industrial sectors registered declines. Table 1 summarizes activities in several key construction segments.

During the first quarter there were positive economic signs of a growing economy, lowering inflation, and increasing optimism. Furthermore, interest rates were stable and even declining during much of the first quarter. However, toward the end of the quarter they began to increase again for the third time in little over a year. Although interest rates appeared to have peaked during the second quarter, the prime interest rate did reach 20 percent, the FHA/VA mortgage interest rate was raised to 15.5 percent, and the conventional mortgage interest rate was over 16 percent. While increasing interest rates appeared to affect activity in the latter portion of the first quarter, most of the detrimental impact will be felt during the second quarter.

Total construction activity in Arizona for the first quarter was 21,935 issued permits, valued at $666 million. For Maricopa County, 12,517 permits valued at $384 million were recorded. These levels of activity are fairly comparable to the first and fourth quarters of 1980.

Residential Sector

Because it was widely held that interest rates would begin to decline, residential construction activity began to increase. Although much of the increase can be attributed to an expected economic improvement, a portion of the increase is due to a push to obtain permits before an increase in development fees in several cities of Maricopa County.

In Maricopa County, 3,698 single family permits valued at $165 milion were issued. This represents a 15 percent increase over the 3,224 permits of the fourth quarter, 1980, which were issued for a value of $143 million. Furthermore, it shows an increase of 29 percent over a year ago when 2,864 permits were issued for $108 million. On a month-by-month basis for 1981, there was a definite upward trend: January, 1,137 permits for $49 million; February, 1,223 permits for $56 million; and March, 1,338 permits for $61 million. However, in April, as a response to negative economic factors, single-family activity declined slightly to 1,295 permits valued at $60 million.

Due to the importance of the housing industry in Maricopa County, there is concern about when housing will return to an upward trend and a strengthening market. Figure I shows new-home sales, single-family permits, and commitment interest rates (a future rate based on a 25-year, 75 percent loan-to-price mortgage). A definite positive response is shown to declining or even stabilizing interest rates. It must be recognized that interest rates not only represent an economic cost,

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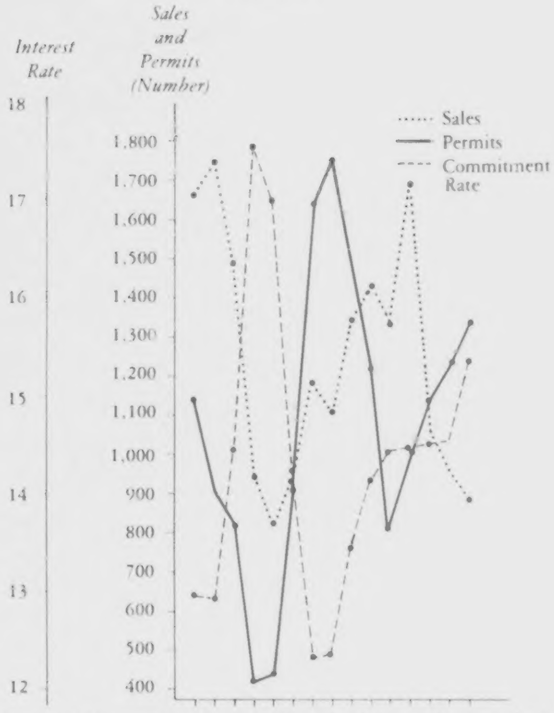
FIGURE I

SINGLE-FAMILY SALES, PERMITS,
AND INTEREST RATES,
MARICOPA COUNTY
1980-1981



Source: Marketron Data Services, Phoenix, Arizona; *News*, Federal Home Loan Bank Board.

but are also watched as an economic indicator. Thus, if interest rates decline and stabilize at acceptable levels (probably in the 12 to 13 percent range by the end of the year), this would be recognized as a positive economic move resulting in a surge in new home activity.

For the rest of the state (including Pima County), the 1,892 permits valued at $86 million represent a downturn in activity from previous quarters. In particular, from the fourth quarter, single-family permits showed a 30 percent decline from the 2,458 permits and a 27 percent decline from the dollar value of $117 million; but from a year ago, this quarter showed a 10 percent decline in permits (2,117 permits) and a 13 percent increase in dollar value ($76 million). For other counties, new home construction activity for the first quarter was as follows: Pima, 774 permits—$42 million; Coconino, 108 permits—$5 million; Mohave, 191 permits—$7 million; Yavapai, 275 permits—$13 million; and Yuma, 127 permits—$7 million.

Commercial Sector

While the residential sector in Maricopa County posted increases, the commercial sector registered a 7 percent decline in issued permits from the fourth quarter (430 to 401 permits), and a 21 percent decrease in dollar value ($129 million to $102 million). This still represents a strong performance in this sector, however.

Table 1 presents construction activity for three key commercial segments which represent over 72 percent of issued permits and 90 percent of dollar value in the commercial sector. Due to the entry of several large apartment developers, the apartment segment has been stable and even reported an increase in construction activity for the first quarter. The office building segment, while registering a decline from the fourth quarter, continued at a good level of performance in response to the expanding service base of Maricopa County. Because of stagnant retail sales and some overbuilding, the retail store segment has been steadily declining for more than a year.

For the rest of Arizona, 352 commercial permits were issued for a total value of $152 million during the first quarter. The total dollar value was significantly affected by an abnormally high level reported for March in unincorporated Pima County in the office building segment (over $73 million). As shown in Table 1, the three segments have shown relatively stable activity over the reported time period.

In the three reported segments, Maricopa and Pima counties accounted for 91 percent of the apartment permits, 83 percent of the office building permits, and 64 percent of the retail store permits. However, because projects tend to be smaller in the nonmetropolitan counties, the metropolitan counties represent over 86 percent of the dollar value registered in the three segments. Relative to first quarter commercial activity, Mohave County reported 34 retail store permits, valued at $2.4 million. Yavapai County issued one apartment permit worth $7.4 million, and Cochise County registered a $1.5 million apartment complex.

Industrial Sector

Although industrial construction in Maricopa County declined slightly, it still represents significant activity in a sluggish economy. Permit activity showed a 13 percent decrease (135 permits to 117 permits), while dollar value showed a 36 percent decrease ($51 million to $33 million) from the fourth quarter of 1980. Most of the industrial activity is concentrated in Phoenix and

TABLE 1

ARIZONA CONSTRUCTION ACTIVITY
(Current Quarter, Previous Quarter, and One Year Ago)

			COMMERCIAL							
	SINGLE FAMILY		*APARTMENTS*[1]		*OFFICE BUILDINGS*[2]		*RETAIL STORES*[3]		*INDUSTRIAL*	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
MARICOPA COUNTY										
1st Quarter, 1981	3,698	164,882,153	112	47,391,440	69	20,775,857	108	24,167,645	117	32,689,989
4th Quarter, 1980	3,224	142,502,981	97	44,644,935	83	38,250,455	123	23,960,183	135	51,315,976
1st Quarter, 1980	2,864	107,657,435	105	50,175,864	46	21,430,351	177	34,489,893	111	36,360,653
PIMA COUNTY										
1st Quarter, 1981	774	41,275,104	14	17,182,830	57	104,482,000	38	7,913,953	6	466,125
4th Quarter, 1980	1,246	68,687,499	18	25,179,422	46	22,554,600	19	3,389,430	4	270,600
1st Quarter, 1980	834	29,137,096	11	8,879,900	53	37,233,440	32	6,150,285	4	1,354,000
REST OF ARIZONA										
1st Quarter, 1981	1,118	45,075,084	12	10,090,177	25	1,157,443	81	4,421,244	22	1,485,562
4th Quarter, 1980	1,212	56,952,157	17	6,490,639	36	2,462,995	97	11,173,732	19	15,795,619
1st Quarter, 1980	1,283	46,392,747	12	960,000	30	1,776,253	86	6,361,633	13	3,233,044
ARIZONA TOTAL										
1st Quarter, 1981	5,590	251,232,341	138	74,664,447	151	126,415,300	227	36,502,842	145	34,641,676
4th Quarter, 1980	5,682	259,856,007	132	76,314,996	165	63,268,050	239	38,523,345	158	67,382,195
1st Quarter, 1980	4,981	183,187,278	117	60,015,764	129	60,440,044	295	47,061,811	128	40,947,697

[1] Five or more housing units

[2] Office, bank, medical, and professional buildings

[3] Shopping centers and other mercantile buildings

its eastside suburbs: Chandler, 7 permits — $1.5 million; Mesa, 10 permits — $6.1 million; Phoenix, 51 permits — $15.2 million; and Tempe, 43 permits — $7.6 million.

Because of the effect that a single project can have on the totals (such as a $10 million industrial project reported in Yavapai County for the fourth quarter), industrial activity can show considerable volatility in areas outside Maricopa County. Besides Pima and Maricopa counties, Apache County reported three permits valued at $693,000; Mohave County had one permit worth $367,640; and Yuma County registered four permits valued at $180,390.

LOOKING AHEAD

As shown in Figure I, the level and movement of interest rates can have a definite impact on the level of new home construction and sales activity, an important sector of the construction industry. Thus, a fundamental question for over a year has been, When will interest rates decline to acceptable levels and stabilize? This movement is necessary not only to reduce the cost of purchasing but also to project a more positive economic environment needed for consumers to make major purchases.

As long as the Federal Reserve continues the policy of combating inflation through a restrictive money policy, interest rates will remain relatively high and volatile. While there are some positive signs that interest rates should begin to decline during the rest of the year, they will not stabilize at acceptable levels until business activity softens to lower loan demand, inflation continues to move downward, and financial institutions improve their liquidity and financial positions.

Although much concern has been focused on the short-term prime interest rate and Treasury bill rate, long-term rates are not expected to decrease until sustained evidence shows that the economy is improving. The key economic concern continues to be inflation and its impact on long-term financial yields. Signs are increasing that inflation is moderating due to falling energy prices, declining housing costs, and stable food prices. While the first two factors are expected to remain stable, the main concern is the impact that unfavorable weather conditions in the United States and other food growing areas could have on food prices. If the positive signs continue, inflation could be below the 10 percent level for the nation, and around 12 percent for the local economy.

Other areas of concern for the remainder of 1981 are Treasury borrowings and consumer confidence. A high degree of uncertainty exists concerning federal borrowing requirements. If the government must increase borrowings to support tax cuts and budget increases for defense, interest rates along a broad range will also have to increase. Consumers are not expected to give a near-term lift to business activity. According to the surveys conducted by the Conference Board, consumers foresee an improving economy and their plans concerning major purchases continued to decline through May.

Despite a lethal dose of high interest rates, the Arizona construction industry did not roll over and play dead. This was especially evident in the single-family market. However, much of the permit activity was in response to expected lower interest rates. Since interest rates have not declined as expected, single-family construction activity should not increase significantly until later this year, or when interest rates are lowered and more stable.

Although the economy is still uncertain, increasing signs of improvement are evident, which should benefit the construction industry. As noted in the annual report, 1981 represents a transitional market, bridging the recession market and a growth market. Because this represents change, market and economic activity will not be consistent until later in 1981. Since no definitive trends exist, some caution must be allowed when analyzing the current and future real estate market. Before construction activity can really escalate, basic economic factors, especially inflation and interest rates, must stabilize at acceptable levels. Once there is sustained evidence of economic stability, construction activity will begin to increase.

Arizona New Housing Starts: Quarterly Report

FIRST QUARTER, 1981

BUILDING PERMITS ISSUED

	1 Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total Housing Units*
APACHE COUNTY	22	3	—	—	1	49
Eagar	6	—	—	—	—	6
St. Johns	—	3	—	—	—	3
Springerville	6	—	—	—	1	30
Unincorporated	10	—	—	—	—	10
COCHISE COUNTY	76	71	1	—	1	249
Benson	5	4	—	—	—	9
Bisbee	1	—	—	—	—	1
Douglas	5	—	—	—	—	5
Huachuca City	—	—	—	—	—	—
Sierra Vista	21	9	—	—	1	130
Tombstone	—	2	1	—	—	4
Unincorporated	43	54	—	—	—	97
Willcox	1	2	—	—	—	3
COCONINO COUNTY	108	72	1	3	—	194
Flagstaff	39	—	1	3	—	53
Fredonia	1	3	—	—	—	4
Page	11	28	—	—	—	39
Unincorporated	57	39	—	—	—	96
Williams	—	2	—	—	—	2
GILA COUNTY	72	33	3	—	—	111
Globe	2	—	—	—	—	2
Hayden	—	—	—	—	—	—
Miami	—	—	—	—	—	—
Payson	27	13	3	—	—	46
Unincorporated	43	20	—	—	—	63
GRAHAM COUNTY	25	29	1	1	—	60
Pima	—	2	—	—	—	2
Safford	10	—	1	1	—	16
Thatcher	—	4	—	—	—	4
Unincorporated	15	23	—	—	—	38
GREENLEE COUNTY	4	—	—	—	—	4
Clifton	1	—	—	—	—	1
Duncan	—	—	—	—	—	—
Unincorporated	3	—	—	—	—	3
MARICOPA COUNTY	3,698	618	38	55	112	6,690
Avondale	1	4	—	—	—	5
Buckeye	4	1	—	—	—	5
Chandler	612	—	—	20	—	692
El Mirage	1	1	—	—	—	2
Gila Bend	2	—	—	—	—	2
Gilbert	23	3	—	2	—	34
Glendale	269	—	—	—	8	319
Goodyear	—	—	—	—	—	—
Guadalupe	—	1	—	—	—	1
Mesa	446	—	18	6	11	832
Paradise Valley	14	—	—	—	—	14
Peoria	86	—	—	—	—	86
Phoenix	1,231	103	10	11	37	2,435
Scottsdale	204	—	—	1	—	207
Surprise	1	8	—	—	—	9
Tempe	173	—	4	14	55	898
Tolleson	1	—	1	—	—	3
Unincorporated	625	497	5	1	1	1,141
Wickenburg	4	—	—	—	—	4
Youngtown	1	—	—	—	—	1
MOHAVE COUNTY	191	272	1	2	2	488
Kingman City	24	2	—	—	—	26
Kingman Area	24	82	—	—	2	123
Lake Havasu City	78	6	1	—	—	86
Lake Havasu Area	—	10	—	—	—	10
Mohave Valley N.	31	90	—	2	—	127
Mohave Valley S.	19	49	—	—	—	68
Dolan Springs	3	19	—	—	—	22
Sacramento Valley	6	8	—	—	—	14
Mohave General	6	6	—	—	—	12
NAVAJO COUNTY	74	46	1	—	—	122
Holbrook	2	—	—	—	—	2
Show Low	5	6	—	—	—	11
Snowflake	12	—	—	—	—	12
Taylor	3	11	—	—	—	14
Unincorporated	43	28	1	—	—	73
Winslow	9	1	—	—	—	10
PIMA COUNTY	774	608	24	12	14	2,284
Marana	1	5	—	—	—	6
Oro Valley	1	—	—	—	—	1
South Tucson	1	—	—	—	—	1
Tucson	225	133	19	12	12	884
Unincorporated	546	470	5	—	2	1,392
PINAL COUNTY	125	550	—	5	—	695
Apache Junction	32	59	—	1	—	95
Casa Grande	18	—	—	—	—	18
Coolidge	—	5	—	—	—	5
Eloy	—	—	—	—	—	—
Florence	—	—	—	—	—	—
Kearny	2	1	—	—	—	3
Mammoth	—	3	—	—	—	3
Superior	—	—	—	—	—	—
Unincorporated	73	482	—	4	—	571
SANTA CRUZ COUNTY	19	1	—	1	—	24
Nogales	1	—	—	—	—	1
Patagonia	1	1	—	1	—	6
Unincorporated	17	—	—	—	—	17
YAVAPAI COUNTY	275	136	6	8	1	626
Chino Valley	11	12	—	—	—	23
Clarkdale	4	—	—	—	—	4
Cottonwood	14	9	—	—	—	23
Jerome	—	—	—	—	—	—
Prescott	47	2	2	5	—	73
Prescott Valley	37	18	3	1	—	65
Unincorporated	162	95	1	2	1	438
YUMA COUNTY	127	67	3	10	7	278
Parker	—	—	—	—	—	—
Somerton	14	1	—	—	—	15
Unincorporated	75	66	—	—	1	147
Wellton	—	—	—	—	—	—
Yuma	38	—	3	10	6	116
Total, Maricopa Co., 1st Quarter 1981	3,698	618	38	55	112	6,690
Total, Maricopa Co., 1st Quarter, 1980	2,864	560	28	42	105	6,326
Percent Change	29	10	35	30	6	5
Total, Arizona, 1st Quarter 1981	5,590	2,506	79	97	138	11,874
Total, Arizona, 1st Quarter 1980	4,981	1,901	60	84	117	10,536
Percent Change	12	31	31	15	17	12

Arizona Building Permits: Quarterly Report

FIRST QUARTER, 1981	RESIDENTIAL* Number of Permits	RESIDENTIAL* Dollar Value	COMMERCIAL Number of Permits	COMMERCIAL Dollar Value	INDUSTRIAL Number of Permits	INDUSTRIAL Dollar Value	OTHER Number of Permits	OTHER Dollar Value	TOTAL Number of Permits	TOTAL Dollar Value
APACHE COUNTY	32	384,450	4	57,000	3	693,000	3	10,200	42	1,144,650
Eagar	7	248,000	1	57,000	3	693,000	—	—	11	998,000
St. Johns	8	N/C	—	—	—	—	1	N/C	9	N/C
Springerville	6	N/C	3	—	—	—	—	—	9	N/C
Unincorporated	11	136,450	—	—	—	—	2	10,200	13	146,650
COCHISE COUNTY	272	4,576,758	19	2,257,636	3	27,200	247	1,368,464	541	8,230,058
Benson	15	287,500	1	250,000	1	24,000	9	41,600	26	603,100
Bisbee	19	60,250	—	—	—	—	—	—	19	60,250
Douglas	24	368,473	1	31,824	—	—	38	115,931	63	516,228
Huachuca City	10	13,571	—	—	1	2,000	—	—	11	15,571
Sierra Vista	68	1,108,586	4	1,718,512	—	—	156	318,049	228	3,145,147
Tombstone	11	43,550	2	46,000	—	—	4	2,350	17	91,900
Unincorporated	113	2,634,828	9	161,300	1	1,200	35	887,884	158	3,685,212
Willcox	12	60,000	2	50,000	—	—	5	2,650	19	112,650
COCONINO COUNTY	271	5,974,607	24	803,147	3	76,100	76	746,298	374	7,600,152
Flagstaff	67	2,499,683	16	505,898	3	76,100	47	320,554	133	3,402,235
Fredonia	6	70,000	—	—	—	—	2	500	8	70,500
Page	60	852,762	3	14,300	—	—	6	328,200	69	1,195,262
Unincorporated	129	2,501,644	5	282,949	—	—	12	88,119	146	2,872,712
Williams	9	50,518	—	—	—	—	9	8,925	18	59,443
GILA COUNTY	193	2,527,693	6	135,000	—	—	73	366,651	272	3,029,344
Globe	16	50,600	—	—	—	—	21	112,700	37	163,300
Hayden	2	1,200	—	—	—	—	2	700	4	1,900
Miami	11	36,590	—	—	—	—	1	8,000	12	44,590
Payson	61	652,553	3	17,000	—	—	35	21,851	99	691,404
Unincorporated	103	1,786,750	3	118,000	—	—	14	223,400	120	2,128,150
GRAHAM COUNTY	114	1,403,189	8	171,800	—	—	8	30,885	130	1,605,874
Pima	2	3,500	—	—	—	—	—	—	2	3,500
Safford	33	444,938	6	96,800	—	—	5	4,885	44	546,623
Thatcher	18	130,980	—	—	—	—	2	23,000	20	153,980
Unincorporated	61	823,771	2	75,000	—	—	1	3,000	64	901,771
GREENLEE COUNTY	4	94,655	1	1,000	—	—	—	—	5	95,655
Clifton	1	N/C	—	—	—	—	—	—	1	N/C
Duncan	—	—	—	—	—	—	—	—	—	—
Unincorporated	3	94,655	1	1,000	—	—	—	—	4	95,655
MARICOPA COUNTY	6,635	177,459,984	401	101,976,154	117	32,689,989	5,364	71,705,189	12,517	383,831,316
Avondale	7	32,880	1	34,000	—	—	34	101,834	42	168,714
Buckeye	13	113,478	2	135,000	—	—	3	3,504	18	251,982
Chandler	685	19,305,168	23	1,962,320	7	1,534,840	759	2,951,279	1,474	25,753,607
El Mirage	9	38,154	—	—	—	—	7	24,924	16	63,078
Gila Bend	4	100,900	—	—	—	—	1	500	5	101,400
Gilbert	56	1,201,395	3	221,880	1	10,000	54	68,321	114	1,501,596
Glendale	346	8,336,960	38	3,919,700	4	99,000	553	4,547,996	941	16,903,656
Goodyear	3	5,450	1	279,930	—	—	26	521,233	30	806,613
Guadalupe	8	48,880	1	N/C	—	—	2	2,592	11	51,472
Mesa	572	18,862,811	43	19,697,768	10	6,119,868	861	11,038,096	1,486	55,718,543
Paradise Valley	64	2,607,186	—	—	—	—	42	306,160	106	2,913,346
Peoria	106	2,112,352	9	1,257,092	—	—	149	1,548,619	264	4,918,063
Phoenix	2,190	66,938,091	128	50,503,676	51	15,271,281	1,717	20,924,029	4,086	153,637,077
Scottsdale	318	15,016,644	24	4,305,038	—	—	445	2,980,635	787	22,302,317
Surprise	20	99,250	—	—	—	—	5	48,400	25	147,650
Tempe	295	10,810,800	94	14,153,800	43	7,655,000	193	5,292,500	625	37,912,100
Tolleson	21	47,445	2	33,000	—	—	4	12,555	27	93,000
Unincorporated	1,845	31,528,005	31	5,429,750	1	2,000,000	503	21,298,142	2,380	60,255,897
Wickenburg	6	170,500	1	43,200	—	—	1	25,000	8	238,700
Youngtown	67	83,635	—	—	—	—	5	8,870	72	92,505

Arizona Building Permits: Quarterly Report (Continued)

FIRST QUARTER, 1981	*RESIDENTIAL**		*COMMERCIAL*		*INDUSTRIAL*		*OTHER*		*TOTAL*	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
MOHAVE COUNTY	825	11,978,493	57	3,353,824	1	367,640	692	3,456,289	1,575	19,156,246
Kingman City	61	966,104	13	1,027,740	—	—	21	35,082	95	2,028,926
Kingman Area	162	1,879,725	5	457,760	—	—	142	142,689	309	2,480,174
Lake Havasu City	129	3,859,047	11	718,312	—	—	74	2,342,262	214	6,919,621
Lake Havasu Area	21	166,638	1	17,280	—	—	32	199,670	54	383,588
Mohave Valley N.	242	2,685,317	17	784,024	—	—	237	431,968	496	3,901,309
Mohave Valley S.	130	1,518,890	6	263,016	—	—	125	239,184	261	2,021,090
Dolan Springs	40	340,847	2	43,836	—	—	29	34,172	71	418,855
Sacramento Valley	23	302,255	2	41,856	—	—	23	19,158	48	63,269
Mohave General	17	259,670	—	—	1	367,640	9	12,104	27	639,414
NAVAJO COUNTY	182	2,915,742	11	300,653	2	59,532	15	50,644	210	3,326,571
Holbrook	4	81,500	—	—	—	—	2	12,000	6	93,500
Show Low	13	165,783	4	56,244	2	59,532	—	—	19	281,559
Snowflake	12	N/C	—	—	—	—	—	—	12	N/C
Taylor	15	161,000	2	90,000	—	—	1	7,000	18	258,000
Unincorporated	117	2,041,459	5	154,409	—	—	8	28,944	130	2,224,812
Winslow	21	466,000	—	—	—	—	4	2,700	25	468,700
PIMA COUNTY	2,230	46,512,853	130	131,435,127	6	466,125	1,373	11,293,357	3,739	189,707,462
Marana	8	N/C	1	N/C	—	—	3	N/C	12	N/C
Oro Valley	2	159,000	—	—	—	—	—	—	2	159,000
South Tucson	31	73,960	2	42,688	4	132,825	10	9,300	47	258,773
Tucson	795	12,232,546	72	16,883,139	2	333,300	659	8,170,255	1,528	37,619,240
Unincorporated	1,394	34,047,347	55	114,509,300	—	—	701	3,113,802	2,150	151,670,449
PINAL COUNTY	836	5,994,210	15	579,950	—	—	196	574,486	1,047	7,148,646
Apache Junction	128	1,980,893	3	172,163	—	—	93	115,087	224	2,268,143
Casa Grande	26	921,965	—	—	—	—	11	98,179	37	1,020,144
Coolidge	43	109,513	5	67,000	—	—	7	21,300	55	197,813
Eloy	11	15,753	1	120,000	—	—	5	2,450	17	138,203
Florence	2	1,500	2	787	—	—	6	17,870	10	20,157
Kearny	6	95,400	—	—	—	—	—	—	6	95,400
Mammoth	4	12,000	—	—	—	—	—	—	4	12,000
Superior	3	800	—	—	—	—	7	1,736	10	2,536
Unincorporated	613	2,856,386	4	220,000	—	—	67	317,864	684	3,394,250
SANTA CRUZ COUNTY	38	1,145,734	6	304,600	1	5,000	17	106,222	62	1,561,556
Nogales	11	39,175	—	—	—	—	10	66,535	21	105,710
Patagonia	5	62,425	3	60,600	1	5,000	2	190	11	128,215
Unincorporated	22	1,044,134	3	244,000	—	—	5	39,497	30	1,327,631
YAVAPAI COUNTY	639	16,548,944	40	9,912,132	5	76,700	249	1,231,432	933	27,769,208
Chino Valley	36	746,340	4	31,300	1	5,000	2	3,500	43	786,140
Clarkdale	15	183,060	—	—	1	17,500	1	400	17	200,960
Cottonwood	57	685,178	4	275,000	1	40,000	23	55,288	85	1,055,466
Jerome	2	4,400	2	4,700	—	—	2	2,800	6	11,900
Prescott	121	2,914,272	9	773,380	—	—	112	450,487	242	4,138,139
Prescott Valley	71	1,389,768	5	181,872	—	—	1	139,776	77	1,711,416
Unincorporated	337	10,625,926	16	8,645,880	2	14,200	108	579,181	463	19,865,187
YUMA COUNTY	350	8,098,972	31	2,580,796	4	180,390	103	1,308,480	488	12,168,638
Parker	—	—	—	—	1	44,000	13	419,400	14	463,400
Somerton	19	696,220	—	—	—	—	4	4,700	23	700,920
Unincorporated	208	5,137,800	13	721,116	—	—	21	208,175	242	6,067,091
Wellton	—	—	—	—	—	—	3	46,000	3	46,000
Yuma	123	2,264,952	18	1,859,680	3	136,390	62	630,205	206	4,891,227
Total, Maricopa County 1st Quarter, 1981	6,635	177,459,984	401	101,976,154	117	32,689,989	5,364	71,705,189	12,517	383,831,316
Total, Maricopa County 1st Quarter, 1980	6,113	121,018,876	475	123,422,891	111	36,360,653	5,635	65,939,623	12,334	346,742,043
Percent Change	8	46	-15	-17	5	-10	-4	8	1	10
Total, Arizona 1st Quarter, 1981	12,621	285,616,284	753	253,868,819	145	34,641,676	8,416	92,248,597	21,935	666,375,376
Total, Arizona 1st Quarter, 1980	11,825	216,387,616	840	191,531,552	128	40,947,697	9,010	95,095,410	21,803	543,962,275
Percent Change	6	31	-10	32	13	-15	-6	-2	—	22

*Includes mobile homes N/C: Not collected.

Arizona New Housing Starts: Monthly Report

APRIL, 1981

BUILDING PERMITS ISSUED

	1 Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total Housing Units*
APACHE COUNTY	10	4	—	—	—	14
Eagar	3	—	—	—	—	3
St. Johns	1	4	—	—	—	5
Springerville	3	—	—	—	—	3
Unincorporated	3	—	—	—	—	3
COCHISE COUNTY	25	32	—	—	1	101
Benson	—	2	—	—	—	2
Bisbee	—	—	—	—	—	—
Douglas	2	—	—	—	—	2
Huachuca City	—	—	—	—	1	44
Sierra Vista	4	3	—	—	—	7
Tombstone	—	1	—	—	—	1
Unincorporated	17	26	—	—	—	43
Willcox	2	—	—	—	—	2
COCONINO COUNTY	81	67	10	—	—	168
Flagstaff	30	—	10	—	—	50
Fredonia	—	1	—	—	—	1
Page	3	14	—	—	—	17
Unincorporated	48	51	—	—	—	99
Williams	—	1	—	—	—	1
GILA COUNTY	40	27	—	—	—	67
Globe	4	—	—	—	—	4
Hayden	—	—	—	—	—	—
Miami	—	—	—	—	—	—
Payson	14	12	—	—	—	26
Unincorporated	22	15	—	—	—	37
GRAHAM COUNTY	10	12	—	—	—	22
Pima	—	—	—	—	—	—
Safford	2	—	—	—	—	2
Thatcher	3	—	—	—	—	3
Unincorporated	5	12	—	—	—	17
GREENLEE COUNTY	3	—	—	—	—	3
Clifton	—	—	—	—	—	—
Duncan	—	—	—	—	—	—
Unincorporated	3	—	—	—	—	3
MARICOPA COUNTY	1,295	160	14	31	24	2,498
Avondale	1	—	—	10	—	41
Buckeye	—	1	—	—	—	1
Chandler	75	—	—	11	—	119
El Mirage	—	—	—	—	—	—
Gila Bend	—	—	—	—	—	—
Gilbert	10	—	1	—	—	12
Glendale	70	—	—	1	—	74
Goodyear	—	—	—	—	—	—
Guadalupe	1	—	—	—	—	1
Mesa	174	—	5	1	3	312
Paradise Valley	9	—	—	—	—	9
Peoria	24	—	3	—	—	30
Phoenix	383	30	4	5	9	,989
Scottsdale	207	—	—	—	1	267
Surprise	1	2	—	—	—	3
Tempe	34	—	—	2	11	202
Tolleson	1	—	—	—	—	1
Unincorporated	301	127	1	1	—	433
Wickenburg	3	—	—	—	—	3
Youngtown	1	—	—	—	—	1
MOHAVE COUNTY	65	90	—	—	5	200
Kingman City	12	1	—	—	—	13
Kingman Area	11	27	—	—	—	38
Lake Havasu City	27	3	—	—	5	75
Lake Havasu Area	—	4	—	—	—	4
Mohave Valley N.	8	33	—	—	—	41
Mohave Valley S.	4	17	—	—	—	21
Dolan Springs	—	1	—	—	—	1
Sacramento Valley	1	3	—	—	—	4
Mohave General	2	1	—	—	—	3
NAVAJO COUNTY	73	23	—	—	—	96
Holbrook	—	—	—	—	—	—
Show Low	12	5	—	—	—	17
Snowflake	9	—	—	—	—	9
Taylor	5	5	—	—	—	10
Unincorporated	46	13	—	—	—	59
Winslow	1	—	—	—	—	1
PIMA COUNTY	238	120	7	8	1	410
Marana	—	—	—	—	—	—
Oro Valley	2	—	—	—	—	2
South Tucson	—	—	—	—	—	—
Tucson	70	67	7	8	1	189
Unincorporated	166	53	—	—	—	219
PINAL COUNTY	49	60	—	1	—	112
Apache Junction	11	29	—	—	—	40
Casa Grande	9	—	—	—	—	9
Coolidge	2	2	—	—	—	4
Eloy	—	—	—	—	—	—
Florence	—	—	—	—	—	—
Kearny	—	1	—	—	—	1
Mammoth	1	—	—	—	—	1
Superior	—	—	—	—	—	—
Unincorporated	25	28	—	1	—	57
SANTA CRUZ COUNTY	12	—	1	—	—	14
Nogales	4	—	—	—	—	4
Patagonia	—	—	1	—	—	2
Unincorporated	8	—	—	—	—	8
YAVAPAI COUNTY	101	58	4	1	1	176
Chino Valley	5	9	—	—	—	14
Clarkdale	—	1	—	—	—	1
Cottonwood	1	2	—	—	—	3
Jerome	—	—	—	—	—	—
Prescott	16	—	1	1	—	22
Prescott Valley	12	6	1	—	—	20
Unincorporated	67	40	2	—	1	116
YUMA COUNTY	50	54	—	5	1	131
Parker	1	—	—	—	—	1
Somerton	7	—	—	—	—	7
Unincorporated	32	51	—	—	—	83
Wellton	—	—	—	—	—	—
Yuma	10	3	—	5	1	40
Total, Maricopa Co., April 1981	1,295	160	14	31	24	2,498
Total, Maricopa Co., April 1980	446	142	3	14	15	1,592
Percent Change	190	12	366	121	59	56
Total, Arizona, April 1981	2,052	707	36	46	33	4,012
Total, Arizona, April 1980	1,028	647	18	26	19	2,782
Percent Change	99	9	100	76	73	44

Arizona New Housing Starts: Monthly Report

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	BUILDING PERMITS ISSUED					
	1 Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total Housing Units*
APACHE COUNTY	19	1	—	—	—	20
Eagar	6	—	—	—	—	6
St. Johns	—	1	—	—	—	1
Springerville	2	—	—	—	—	2
Unincorporated	11	—	—	—	—	11
COCHISE COUNTY	21	38	—	—	2	83
Benson	—	—	—	—	—	—
Bisbee	—	—	—	—	—	—
Douglas	3	—	—	—	2	27
Huachuca City	—	—	—	—	—	—
Sierra Vista	1	29	—	—	—	30
Tombstone	1	—	—	—	—	1
Unincorporated	14	9	—	—	—	23
Willcox	2	—	—	—	—	2
COCONINO COUNTY	80	45	3	—	1	137
Flagstaff	25	—	3	—	—	31
Fredonia	—	2	—	—	—	2
Page	4	6	—	—	—	10
Unincorporated	49	35	—	—	1	90
Williams	2	2	—	—	—	4
GILA COUNTY	37	25	—	—	—	62
Globe	1	—	—	—	—	1
Hayden	—	—	—	—	—	—
Miami	—	—	—	—	—	—
Payson	10	13	—	—	—	23
Unincorporated	26	12	—	—	—	38
GRAHAM COUNTY	10	12	—	2	—	30
Pima	—	2	—	—	—	2
Safford	2	—	—	2	—	10
Thatcher	1	2	—	—	—	3
Unincorporated	7	8	—	—	—	15
GREENLEE COUNTY	1	—	—	—	—	1
Clifton	1	—	—	—	—	1
Duncan	—	—	—	—	—	—
Unincorporated	—	—	—	—	—	—
MARICOPA COUNTY	2,120	114	9	24	46	5,542
Avondale	—	—	—	—	—	—
Buckeye	—	—	—	—	—	—
Chandler	15	—	—	—	—	15
El Mirage	1	1	—	—	—	2
Gila Bend	—	—	—	—	—	—
Gilbert	23	—	—	—	—	23
Glendale	71	—	—	—	—	71
Goodyear	—	—	—	—	—	—
Guadalupe	—	—	—	—	—	—
Mesa	128	—	2	9	5	375
Paradise Valley	16	—	—	—	—	16
Peoria	21	—	—	—	—	21
Phoenix	1,305	17	3	5	41	4,335
Scottsdale	64	—	—	—	—	64
Surprise	1	1	—	—	—	2
Tempe	44	—	4	9	—	88
Tolleson	1	—	—	—	—	1
Unincorporated	429	95	—	1	—	528
Wickenburg	1	—	—	—	—	1
Youngtown	—	—	—	—	—	—
MOHAVE COUNTY	51	98	1	—	1	163
Kingman City	7	—	—	—	—	7
Kingman Area	7	28	—	—	—	35
Lake Havasu City	19	—	1	—	—	21
Lake Havasu Area	—	2	—	—	—	2
Mohave Valley N.	8	32	—	—	1	52
Mohave Valley S.	—	28	—	—	—	28
Dolan Springs	2	2	—	—	—	4
Sacramento Valley	5	6	—	—	—	11
Mohave General	3	—	—	—	—	3
NAVAJO COUNTY	77	31	—	—	—	108
Holbrook	1	—	—	—	—	1
Show Low	3	6	—	—	—	9
Snowflake	4	—	—	—	—	4
Taylor	1	—	—	—	—	1
Unincorporated	66	25	—	—	—	91
Winslow	2	—	—	—	—	2
PIMA COUNTY	144	108	10	7	4	373
Marana	—	2	1	—	—	4
Oro Valley	—	—	—	—	—	—
South Tucson	1	—	1	—	—	3
Tucson	53	59	8	7	4	229
Unincorporated	90	47	—	—	—	137
PINAL COUNTY	54	51	2	1	—	113
Apache Junction	16	11	2	—	—	31
Casa Grande	12	—	—	—	—	12
Coolidge	—	3	—	—	—	3
Eloy	—	—	—	—	—	—
Florence	—	—	—	—	—	—
Kearny	1	—	—	—	—	1
Mammoth	3	—	—	—	—	3
Superior	—	—	—	—	—	—
Unincorporated	22	37	—	1	—	63
SANTA CRUZ COUNTY	17	1	—	—	—	18
Nogales	8	—	—	—	—	8
Patagonia	—	1	—	—	—	1
Unincorporated	9	—	—	—	—	9
YAVAPAI COUNTY	88	48	—	5	1	166
Chino Valley	—	7	—	—	—	7
Clarkdale	3	—	—	—	—	3
Cottonwood	1	1	—	—	—	2
Jerome	—	—	—	—	—	—
Prescott	14	3	—	3	1	41
Prescott Valley	10	5	—	1	—	18
Unincorporated	60	32	—	1	—	95
YUMA COUNTY	31	39	—	2	4	108
Parker	—	—	—	—	—	—
Somerton	11	—	—	—	—	11
Unincorporated	16	34	—	—	—	50
Wellton	—	—	—	—	—	—
Yuma	4	5	—	2	4	47
Total, Maricopa Co., May 1981	2,120	114	9	24	46	5,542
Total, Maricopa Co., May 1980	435	142	20	47	8	948
Percent Change	*387*	*-19*	*-54*	*-48*	*475*	*484*
Total, Arizona, May 1981	2,750	611	25	41	59	6,924
Total, Arizona, May 1980	906	647	36	52	20	2,131
Percent Change	*203*	*-5*	*-30*	*-21*	*194*	*224*

APRIL, 1981

Arizona Building Permits: Monthly Report

	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
APACHE CO.	15	229,301	4	60,000	—	—	3	27,500	22	316,801
Eagar	3	122,500	1	50,000	—	—	—	—	4	172,500
St. Johns	5	N/C	—	—	—	—	1	N/C	6	N/C
Springerville	3	N/C	2	N/C	—	—	—	—	5	N/C
Unincorporated	4	106,801	1	10,000	—	—	2	27,500	7	144,301
COCHISE CO.	127	1,834,063	6	1,225,724	—	—	102	295,173	235	3,354,960
Benson	9	25,875	1	83,000	—	—	2	3,025	12	111,900
Bisbee	11	24,700	—	—	—	—	1	13,955	12	38,655
Douglas	10	270,332	—	—	—	—	17	37,346	27	307,678
Huachuca City	9	6,673	1	1,040,890	—	—	—	—	10	1,047,563
Sierra Vista	21	170,669	1	40,000	—	—	70	138,388	92	349,057
Tombstone	4	16,500	2	21,834	—	—	1	250	7	38,584
Unincorporated	59	1,254,314	1	40,000	—	—	9	100,439	69	1,394,753
Willcox	4	65,000	—	—	—	—	2	1,770	6	66,770
COCONINO CO.	218	5,484,141	8	556,896	—	—	45	117,410	271	6,158,447
Flagstaff	51	2,949,716	5	169,300	—	—	26	42,656	82	3,161,672
Fredonia	2	2,000	—	—	—	—	1	500	3	2,500
Page	26	202,389	—	—	—	—	—	—	26	202,389
Unincorporated	135	2,312,586	3	387,596	—	—	6	62,365	144	2,762,547
Williams	4	17,450	—	—	—	—	12	11,889	16	29,339
GILA CO.	98	1,348,272	5	76,864	—	—	52	80,240	155	1,505,376
Globe	7	99,600	—	—	—	—	8	16,405	15	116,005
Hayden	—	—	—	—	—	—	3	3,175	3	3,175
Miami	4	24,000	—	—	—	—	—	—	4	24,000
Payson	36	279,972	3	63,864	—	—	38	39,078	77	382,914
Unincorporated	51	944,700	2	13,000	—	—	3	21,582	56	979,282
GRAHAM CO.	35	650,681	—	—	—	—	5	39,100	40	689,781
Pima	—	—	—	—	—	—	—	—	—	—
Safford	8	97,240	—	—	—	—	4	36,900	12	134,140
Thatcher	8	201,710	—	—	—	—	—	—	8	201,710
Unincorporated	19	351,731	—	—	—	—	1	2,200	20	353,931
GREENLEE CO.	3	86,000	—	—	—	—	2	15,000	5	101,000
Clifton	—	—	—	—	—	—	1	N/C	1	N/C
Duncan	—	—	—	—	—	—	1	15,000	1	15,000
Unincorporated	3	86,000	—	—	—	—	—	—	3	86,000
MARICOPA CO.	2,277	64,599,152	156	45,800,504	49	7,439,541	2,143	17,192,268	4,625	135,031,465
Avondale	6	34,050	10	630,000	—	—	5	14,200	21	678,250
Buckeye	2	800	—	—	1	50,000	4	11,772	7	62,572
Chandler	102	2,016,879	15	2,456,520	2	155,500	185	661,829	304	5,290,728
El Mirage	4	6,500	—	—	—	—	3	125,900	7	132,400
Gila Bend	—	—	2	12,000	—	—	5	91,800	7	103,800
Gilbert	12	499,835	—	—	—	—	19	65,695	31	565,530
Glendale	110	2,553,470	13	1,163,540	—	—	248	895,455	371	4,612,465
Goodyear	—	—	—	—	4	721,200	21	76,803	25	798,003
Guadalupe	1	12,480	—	—	—	—	—	—	1	12,480
Mesa	220	7,517,812	17	4,950,252	1	129,000	344	2,056,174	582	14,653,238
Paradise Valley	27	1,361,908	—	—	—	—	28	175,239	55	1,537,147
Peoria	35	642,000	1	96,000	—	—	37	69,956	73	807,956
Phoenix	717	19,635,926	31	21,991,896	21	3,218,641	742	8,707,030	1,511	53,553,493
Scottsdale	249	12,748,232	13	6,565,796	—	—	198	1,628,199	460	20,942,227
Surprise	8	42,900	—	—	—	—	4	9,950	12	52,850
Tempe	85	2,502,500	32	6,777,800	19	1,965,200	94	1,181,400	230	12,426,900
Tolleson	6	29,290	—	—	—	—	7	10,563	13	39,853
Unincorporated	672	14,785,055	22	1,156,700	1	1,200,000	198	1,380,303	893	18,522,058
Wickenburg	3	150,000	—	—	—	—	—	—	3	150,000
Youngtown	18	59,515	—	—	—	—	1	30,000	19	89,515

Arizona Building Permits: Monthly Report (Continued)

APRIL, 1981	RESIDENTIAL[*]		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
MOHAVE CO.	255	3,765,460	33	2,152,389	—	—	212	593,175	500	6,511,024
Kingman City	23	444,441	2	5,840	—	—	10	62,367	35	512,648
Kingman Area	60	737,615	2	56,256	—	—	53	61,924	115	855,795
Lake Havasu City	38	1,120,580	9	1,497,191	—	—	19	98,305	66	2,716,076
Lake Havasu Area	5	54,632	—	—	—	—	5	17,656	10	72,288
Mohave Valley N	76	863,869	11	373,302	—	—	77	130,003	164	1,367,174
Mohave Valley S	38	376,893	8	200,120	—	—	31	45,806	77	622,819
Dolan Springs	1	13,720	—	—	—	—	1	650	2	14,370
Sacramento Valley	8	59,182	—	—	—	—	11	16,404	19	75,586
Mohave Co. General	6	94,528	1	19,680	—	—	5	160,060	12	274,268
NAVAJO CO.	120	2,560,876	3	275,209	—	—	7	143,549	130	2,979,634
Holbrook	1	16,000	1	130,000	—	—	—	—	2	146,000
Show Low	17	436,705	1	121,800	—	—	1	124,800	19	683,305
Snowflake	9	N/C	—	—	—	—	—	—	9	N/C
Taylor	11	242,000	—	—	—	—	1	2,000	12	244,000
Unincorporated	75	1,794,071	1	23,409	—	—	5	16,749	81	1,834,229
Winslow	7	72,100	—	—	—	—	—	—	7	72,100
PIMA CO.	675	16,128,282	43	9,799,780	2	185,800	565	4,047,493	1,285	30,161,355
Marana	—	—	1	N/C	—	—	—	—	1	N/C
Oro Valley	2	155,000	—	—	—	—	—	—	2	155,000
South Tucson	12	71,896	—	—	—	—	1	—	13	71,896
Tucson	321	4,547,386	27	4,481,280	2	185,800	266	2,588,633	616	11,803,099
Unincorporated	340	11,354,000	15	5,318,500	—	—	298	1,458,860	653	18,131,360
PINAL CO.	155	2,215,402	3	215,000	3	59,772	96	352,010	257	2,842,184
Apache Jct.	44	816,448	2	155,000	—	—	51	105,381	97	1,076,829
Casa Grande	19	444,885	—	—	3	59,772	11	113,148	33	617,805
Coolidge	16	146,400	—	—	—	—	3	16,500	19	162,900
Eloy	3	8,324	—	—	—	—	2	11,600	5	19,924
Florence	1	300	—	—	—	—	1	900	2	1,200
Kearny	2	1,500	—	—	—	—	—	—	2	1,500
Mammoth	2	N/C	—	—	—	—	—	—	2	N/C
Superior	6	40,400	—	—	—	—	3	2,000	9	42,400
Unincorporated	62	757,145	1	60,000	—	—	26	102,481	88	919,626
SANTA CRUZ CO.	18	593,205	—	—	2	225,000	—	44,464	46	862,669
Nogales	9	260,025	—	—	—	—	20	5,150	29	265,175
Patagonia	1	21,000	—	—	—	—	2	4,500	3	571,994
Unincorporated	8	312,180	—	—	2	225,000	4	34,814	14	25,500
YAVAPAI CO.	252	10,273,912	7	828,660	1	16,000	89	208,624	349	11,327,196
Chino Valley	19	280,453	1	25,000	—	—	5	3,400	25	308,853
Clarkdale	1	14,600	—	—	—	—	—	—	1	14,600
Cottonwood	18	74,901	1	80,000	—	—	2	4,805	21	159,706
Jerome	1	100	—	—	—	—	2	3,000	3	3,100
Prescott	44	945,350	2	176,460	—	—	41	97,384	87	1,219,194
Prescott Valley	21	422,086	—	—	1	16,000	—	—	22	438,086
Unincorporated	148	8,536,422	3	547,200	—	—	39	100,035	190	9,183,657
YUMA CO.	181	3,646,963	15	1,500,292	1	244,560	39	638,813	236	6,030,628
Parker	2	31,160	2	45,000	—	—	1	1,000	5	77,160
Somerton	8	328,600	1	8,400	—	—	—	—	9	337,000
Unincorporated	112	2,642,375	2	144,720	1	244,560	12	330,346	127	3,362,001
Wellton	1	2,000	1	5,000	—	—	—	—	2	7,000
Yuma	58	642,828	9	1,297,172	—	—	26	307,467	93	2,247,467
Total Maricopa Co. April, 1981	2,277	64,599,152	156	45,800,504	49	7,439,541	2,143	17,192,268	4,625	135,031,465
Total Maricopa Co. April, 1980	1,296	20,236,121	304	50,080,988	33	6,870,552	1,943	20,954,421	3,576	100,142,082
Percent Change	75	219	-48	-8	48	8	10	-17	29	34
Total Arizona, April, 1981	4,429	113,415,710	233	62,491,318	58	8,170,673	3,386	23,794,819	8,156	207,872,520
Total Arizona, April, 1980	3,718	50,468,088	515	64,218,002	41	9,479,776	2,966	31,210,932	7,240	155,376,798
Percent Change	19	124	-45	-2	41	-13	14	-23	12	33

[*] Includes mobile homes N/C: Not collected

Arizona Building Permits: Monthly Report

MAY, 1981	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
APACHE COUNTY	21	509,262	1	—	—	—	—	—	22	509,262
Eagar	6	221,000	—	—	—	—	—	—	6	221,000
St. Johns	1	N/C	—	—	—	—	—	—	1	N/C
Springerville	2	N/C	1	N/C	—	—	—	—	3	N/C
Unincorporated	12	288,262	—	—	—	—	—	—	12	288,262
COCHISE COUNTY	125	1,445,373	8	950,300	1	10,000	118	278,641	252	2,684,314
Benson	6	20,460	—	—	—	—	3	850	9	21,310
Bisbee	8	16,900	—	—	—	—	1	3,000	9	19,900
Douglas	12	234,175	2	700,200	—	—	23	54,139	37	988,514
Huachuca City	6	8,310	—	—	1	10,000	—	—	7	18,310
Sierra Vista	46	81,732	4	249,000	—	—	73	113,425	123	444,157
Tombstone	7	29,575	—	—	—	—	1	7,110	8	36,685
Unincorporated	34	975,856	—	—	—	—	11	92,379	45	1,068,235
Willcox	6	78,365	2	1,100	—	—	6	7,738	14	87,203
COCONINO COUNTY	223	5,268,505	7	297,909	1	87,500	37	204,611	268	5,858,525
Flagstaff	51	2,570,496	3	194,200	—	—	21	131,362	75	2,896,058
Fredonia	2	N/C	1	1,400	—	—	1	150	4	1,550
Page	19	213,444	—	—	1	87,500	7	8,000	27	308,944
Unincorporated	146	2,372,127	3	102,309	—	—	5	41,747	154	2,516,183
Williams	5	112,438	—	—	—	—	3	23,352	8	135,790
GILA COUNTY	101	1,223,862	2	129,000	—	—	32	62,670	135	1,415,532
Globe	4	47,800	—	—	—	—	4	11,900	8	59,700
Hayden	4	2,125	—	—	—	—	—	—	4	2,125
Miami	7	17,700	—	—	—	—	—	—	7	17,700
Payson	32	282,847	1	34,000	—	—	21	28,017	54	344,864
Unincorporated	54	873,390	1	95,000	—	—	7	22,753	62	991,143
GRAHAM COUNTY	42	581,029	5	193,300	—	—	5	17,350	52	791,679
Pima	3	60,000	1	23,000	—	—	—	—	4	83,000
Safford	14	96,000	3	169,300	—	—	3	16,250	20	281,550
Thatcher	7	70,710	—	—	—	—	2	1,100	9	71,810
Unincorporated	18	354,319	1	1,000	—	—	—	—	19	355,319
GREENLEE COUNTY	1	—	—	—	—	—	—	—	1	—
Clifton	1	N/C	—	—	—	—	—	—	1	N/C
Duncan	—	—	—	—	—	—	—	—	—	—
Unincorporated	—	—	—	—	—	—	—	—	—	—
MARICOPA COUNTY	2,971	95,051,815	297	85,404,981	42	9,424,916	1,816	14,517,184	5,126	204,398,896
Avondale	—	—	—	—	—	—	7	125,086	7	125,086
Buckeye	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Chandler	49	543,364	4	1,652,150	—	—	106	474,532	159	2,670,046
El Mirage	6	37,600	—	—	—	—	—	—	6	37,600
Gila Bend	—	—	1	35,000	1	400,000	—	—	2	435,000
Gilbert	26	1,075,205	—	—	—	—	3	42,482	29	1,117,687
Glendale	104	2,639,393	7	425,000	—	—	246	937,651	357	4,002,044
Goodyear	—	—	1	80,000	—	—	9	19,490	10	99,490
Guadalupe	1	N/C	—	—	—	—	—	—	1	N/C
Mesa	165	5,363,327	47	8,026,627	1	259,064	312	1,605,304	525	15,254,322
Paradise Valley	28	2,130,000	—	—	—	—	37	309,014	65	2,439,014
Peoria	28	539,614	1	123,420	—	—	43	82,647	72	745,681
Phoenix	1,609	55,564,556	197	70,664,409	13	3,943,652	603	5,657,299	2,422	135,829,916
Scottsdale	101	4,867,481	2	929,875	—	—	200	1,684,903	303	7,482,259
Surprise	5	21,600	1	1,500	—	—	4	3,936	10	27,036
Tempe	91	2,669,300	27	2,935,800	27	4,822,200	72	711,600	217	11,138,900
Tolleson	4	20,055	—	—	—	—	2	119,000	6	139,055
Unincorporated	736	19,535,850	9	531,200	—	—	171	2,544,240	916	22,611,290
Wickenburg	1	32,800	—	—	—	—	—	—	1	32,800
Youngtown	17	11,670	—	—	—	—	1	200,000	18	211,670

Arizona Building Permits: Monthly Report (Continued)

MAY, 1981	RESIDENTIAL* Number of Permits	RESIDENTIAL* Dollar Value	COMMERCIAL Number of Permits	COMMERCIAL Dollar Value	INDUSTRIAL Number of Permits	INDUSTRIAL Dollar Value	OTHER Number of Permits	OTHER Dollar Value	TOTAL Number of Permits	TOTAL Dollar Value
MOHAVE COUNTY	292	3,763,114	16	1,006,266	—	—	270	436,055	578	5,205,435
Kingman City	25	337,552	4	131,466	—	—	6	29,223	35	498,241
Kingman Area	63	660,627	2	147,360	—	—	47	35,008	112	842,995
Lake Havasu City	40	992,742	3	121,686	—	—	26	125,237	69	1,239,665
Lake Havasu Area	5	41,871	1	29,280	—	—	3	4,424	9	75,575
Mohave Valley N	75	846,165	2	442,578	—	—	97	133,630	174	1,422,373
Mohave Valley S	48	463,513	2	84,504	—	—	56	85,762	106	633,779
Dolan Springs	11	62,316	1	27,648	—	—	14	4,708	26	94,672
Sacramento Valley	20	225,184	—	—	—	—	19	13,293	39	238,477
Mohave General	5	133,144	1	21,744	—	—	2	4,770	8	159,658
NAVAJO COUNTY	170	3,381,344	3	95,000	—	—	20	74,233	193	3,550,577
Holbrook	1	31,900	1	5,000	—	—	—	—	2	36,900
Show Low	12	255,898	1	57,600	—	—	13	36,008	26	349,506
Snowflake	4	N/C	—	—	—	—	—	—	4	N/C
Taylor	1	62,000	—	—	—	—	2	1,500	3	63,500
Unincorporated	140	2,913,596	1	32,400	—	—	2	15,475	143	2,961,471
Winslow	12	117,950	—	—	—	—	3	21,250	15	139,200
PIMA COUNTY	506	9,235,367	30	10,433,847	—	—	494	3,273,260	1,030	22,942,474
Marana	4	N/C	—	—	—	—	—	—	4	N/C
Oro Valley	1	40,500	—	—	—	—	—	—	1	40,500
South Tucson	15	149,430	—	—	—	—	1	800	16	150,230
Tucson	267	3,648,737	24	9,687,347	—	—	253	2,111,560	544	15,447,644
Unincorporated	219	5,396,700	6	746,500	—	—	240	1,160,900	465	7,304,100
PINAL COUNTY	150	2,436,726	21	302,953	—	—	55	260,329	226	3,000,008
Apache Junction	35	831,609	—	—	—	—	40	174,022	75	1,005,631
Casa Grande	26	607,769	11	107,253	—	—	1	65,000	38	780,022
Coolidge	13	N/C	—	—	—	—	3	5,900	16	5,900
Eloy	6	12,583	—	—	—	—	—	—	6	12,583
Florence	1	450	—	—	—	—	1	1,175	2	1,625
Kearny	2	41,000	—	—	—	—	—	—	2	41,000
Mammoth	3	115,300	—	—	—	—	—	—	3	115,300
Superior	1	1,500	—	—	—	—	3	4,300	4	5,800
Unincorporated	63	826,515	10	195,700	—	—	7	9,932	80	1,032,147
SANTA CRUZ COUNTY	29	612,075	—	—	—	—	2	384,000	31	996,075
Nogales	17	168,075	—	—	—	—	2	384,000	19	552,075
Patagonia	2	1,500	—	—	—	—	—	—	2	1,500
Unincorporated	10	442,500	—	—	—	—	—	—	10	442,500
YAVAPAI COUNTY	223	4,941,690	27	1,906,306	1	350,000	66	183,097	317	7,381,093
Chino Valley	16	82,450	3	96,000	—	—	4	1,673	23	180,123
Clarkdale	3	148,460	1	34,200	—	—	1	350	5	183,010
Cottonwood	18	95,012	5	101,000	—	—	3	30,700	26	226,712
Jerome	1	500	—	—	—	—	2	1,500	3	2,000
Prescott	38	647,184	10	1,318,946	—	—	38	101,277	86	2,067,407
Prescott Valley	20	345,904	4	178,160	—	—	—	—	24	524,064
Unincorporated	127	3,622,180	4	178,000	1	350,000	18	47,597	150	4,197,777
YUMA COUNTY	138	2,431,614	7	545,306	4	609,552	31	334,391	180	3,920,863
Parker	2	6,000	—	—	2	45,000	1	3,200	5	54,200
Somerton	14	615,629	—	—	—	—	—	—	14	615,629
Unincorporated	93	1,505,800	1	29,620	1	560,310	15	204,265	110	2,299,995
Wellton	—	—	—	—	—	—	—	—	—	—
Yuma	29	304,185	6	515,686	1	4,242	15	126,926	51	951,039
Total, Maricopa Co. May, 1981	2,971	95,051,815	297	85,404,981	42	9,424,916	1,816	14,517,184	5,126	204,398,896
Total, Maricopa Co. May, 1980	1,245	22,041,475	137	36,328,399	40	18,964,042	1,369	15,655,837	2,791	92,989,753
Percent Change	138	331	116	135	4	-50	32	-7	83	119
Total, Arizona May, 1981	4,992	130,881,776	424	101,265,168	49	10,481,968	2,946	20,025,821	8,411	262,654,733
Total, Arizona May, 1980	3,256	53,231,840	228	47,242,621	48	19,196,508	2,247	21,679,881	5,799	141,350,850
Percent Change	53	145	85	114	2	-45	31	-7	45	85

*Includes mobile homes N/C Not collected N/R: No report

Retail Food Prices

MAY, 1981

Retail Food prices in Maricopa County rose 1.5 percent in May, following a 0.9 percent decline in April. The food price survey is compiled by the Bureau of Business and Economic Research, College of Business Administration, at Arizona State University. Cosponsor of the study is Valley National Bank. The May index of 263.2 indicates that shoppers would now have to pay $26.32 for a similar basket of foods that would have cost $10.00 in 1967. These foods could have been purchased for $23.78 one year ago. The May, 1981, index reflects a 10.7 percent increase over the May, 1980, value.

This month's higher index value was the result of increases in all of the subgroups. *Fruits and Vegetables* jumped 4.1 percent, followed by *Other Foods* (2.0 percent), *Cereals and Bakery Products* (0.8 percent), *Dairy Products* (0.7 percent), and *Meats, Poultry, Fish, and Eggs* (0.5 percent).

Even though tomato prices plunged 41.3 percent and oranges fell 8.9 percent, large increases in several categories of *Fruits and Vegetables* resulted in an overall price increase for the subgroup. The miscellaneous fresh vegetables category soared 20.7 percent, primarily due to higher prices for celery and carrots. Lettuce rose 17.7 percent, followed by miscellaneous fresh fruits (17.3 percent).

Moderate increases were noted in most of the categories in *Other Foods*. Cola drinks excluding diet cola rose 8.8 percent, while the miscellaneous condiments category advanced 4.2 percent. Sweets, excluding candy, sugar, and sweeteners, increased 3.6 percent, while a slight decline was noted for frozen prepared food (-1.8 percent).

Most items in *Cereals and Bakery Products* posted increases this month, notably flour and prepared flour mixes (4.8 percent), cookies (3.2 percent), and cereal (1.6 percent). A moderate drop for white bread (-1.1 percent) only partially offset the subgroup's gains. All items in the *Dairy Products* subgroup rose or were unchanged during May. Ice cream and related products climbed 1.1 percent and fresh whole milk increased 0.6 percent.

Although the subgroup *Meats, Poultry, Fish, and Eggs* rose only slightly, it was the result of sharp increases and decreases in several categories. Most meat prices were up, notably ground beef other than canned (16.4 percent), steak other than round or sirloin (8.3 percent), and noncanned ham (7.6 percent). Partially counteracting these increases were falling prices for chicken (-23.4 percent) and eggs (-11.6 percent).

A comparison of February, 1981, Food Consumed at Home for Maricopa County with index values for four selected metropolitan areas reveals that the outlays required to purchase a food group in February, 1981, (obtainable for an outlay of $10.00 at 1967 average prices) were $26.05 in Maricopa County; $26.57 in Los Angeles-Long Beach, $26.72 in San Francisco-Oakland; $26.97 in Chicago-Northwestern Indiana; and averaged $26.73 in the United States.

TABLE 1

INDEX FOR FOOD CONSUMED AT HOME

Maricopa County, United States, and Selected Metropolitan Areas

(Average 1967 = 100 percent)

Group	Maricopa County May, '81[a]	Maricopa County Feb '81[b]	United[*] States Feb. '81	Los Angeles-[*] Long Beach Feb. '81	San Francisco-Oakland Feb. '81	Chicago-[*] Northwestern Indiana Feb. '81
Food Consumed at Home	263.2	260.5	267.3	265.7	267.2	269.7
Cereals and Bakery Products	252.0	248.6	265.3	270.5	273.8	269.2
Meats, Poultry, Fish, and Eggs	256.6	261.0	252.5	253.7	258.1	260.4
Dairy Products	232.9	228.9	242.1	233.7	234.6	234.6
Fruits and Vegetables	262.1	249.0	267.3	258.5	252.4	272.7
Other Foods Consumed at Home	294.7	291.5	323.0	319.4	330.6	328.1

[*] Computed from data contained in *The Consumer Price Index*, U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

[a] Maricopa County food prices are reported for the month closest to publication.

[b] Comparisons of food prices among various cities and the United States average are made on the basis of earlier months because of the lag in collecting price reports from these other areas.

Note: Index Comparisons between Maricopa County and the other regions show only that food prices in Maricopa County have increased more or less than food prices in the other regions since 1967. The indexes cannot be used to determine the actual differences in food price levels between the regions.

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperative cosponsorship with Valley National Bank.

Retail Food Prices

JUNE, 1981

Retail food prices in Maricopa County rose 0.9 percent in June, following a 1.5 percent increase in May. The food price survey is compiled by the Bureau of Business and Economic Research, College of Business Administration, at Arizona State University. Cosponsor of the study is Valley National Bank. The June index of 265.6 indicates that shoppers would now have to pay $26.56 for a similar basket of foods that would have cost $10.00 in 1967. These foods could have been purchased for $23.79 one year ago. The June, 1981, index reflects an 11.6 percent increase over the June, 1980, value.

Fruits and Vegetables posted the largest gain this month (4.5 percent), followed by *Cereals and Bakery Products* (1.4 percent) and *Meats, Poultry, Fish, and Eggs* (0.4 percent). The *Other Foods* subgroup showed a slight increase (0.1 percent), while *Dairy Products* fell -0.3 percent.

Several sharp increases in *Fruits and Vegetables* contributed to that subgroup's large gain. The price of oranges jumped 26.9 percent, followed by potatoes (15.6 percent), lettuce (13.9 percent), and apples (13.5 percent). These increases were moderated by lower prices for bananas (-6.8 percent) and frozen fruit and fruit juices (-5.2 percent).

Higher prices were noted in several categories of *Cereals and Bakery Products* this month. Fresh sweet rolls, coffee cake, and doughnuts rose 4.3 percent, followed by white bread (2.9 percent) and cereal (2.8 percent).

With the exception of poultry items, most categories in the *Meats, Poultry, Fish, and Eggs* showed only minor price fluctuations. Chicken prices jumped 12.8 percent and poultry other than chicken rose 3.9 percent, while pork chops and noncanned ham edged up only 2.2 percent and 1.2 percent, respectively. Declines in the subgroup wefe noted for eggs (-5.5 percent), canned ham (-3.5 percent), and bacon (-0.9 percent).

There were lower prices for sugar/artificial sweeteners (-6.9 percent) and for nuts, potato chips, and other snacks (-2.9 percent) in the *Other Foods* subgroup during June. These declines, however, were offset by higher prices for carbonated drinks excluding nondietary cola (4.3 percent), margarine (2.1 percent), and canned or packaged soup (1.7 percent).

Prices for *Dairy Products* were relatively stable. The miscellaneous dairy products category slid -3.1 percent, primarily due to sale prices for yogurt. Fresh whole milk was down -0.5 percent, while a 0.2 percent rise was noted for cheese as well as fresh milk (other than whole milk) and cream.

A comparison of March, 1981, Food Consumed at Home for Maricopa County with index values for four selected metropolitan areas reveals that the outlays required to purchase a foodstuffs group in March, 1981, (obtainable for an outlay of $10.00 at 1967 average prices) were $26.17 in Maricopa County; $26.79 in Los Angeles-Long Beach; $26.95 in San Francisco-Oakland; $26.97 in Chicago-Northwestern Indiana; and averaged $26.86 in the United States.

TABLE 1
INDEX FOR FOOD CONSUMED AT HOME
Maricopa County, United States, and Selected Metropolitan Areas
(Average 1967 = 100 percent)

Group	*Maricopa County June '81*[a]	*Maricopa County Mar '81*[b]	*United*[*] *States Mar '81*	*Los Angeles*[*] *Long Beach Mar '81*	*San Francisco Oakland*[*] *Mar '81*	*Chicago North-western Indiana Mar '81*
Food Consumed at Home	265.6	261.7	268.6	267.9	269.5	269.7
Cereals and Bakery Products	255.5	248.4	266.7	276.6	277.8	272.4
Meats, Poultry, Fish, and Eggs	257.6	262.9	250.5	250.6	253.8	257.8
Dairy Products	232.3	229.2	242.6	233.8	235.1	234.3
Fruits and Vegetables	273.8	249.5	278.2	269.6	265.7	275.7
Other Foods Consumed at Home	295.0	293.5	324.1	322.8	335.8	328.8

[*] Computed from data contained in *The Consumer Price Index*, U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

[a] Maricopa County food prices are reported for the month closest to publication.

[b] Comparisons of food prices among various cities and the United States average are made on the basis of earlier months because of the lag in collecting price reports from these other areas.

Note: Index Comparisons between Maricopa County and the other regions show only that food prices in Maricopa County have increased more or less than food prices in the other regions since 1967. The indexes cannot be used to determine the actual differences in food price levels between the regions.

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperative cosponsorship with Valley National Bank.

Metropolitan Phoenix Consumer Price Index

SECOND QUARTER, 1981

Consumer prices in Metropolitan Phoenix rose 1.9 percent during the second quarter of 1981. This quarterly increase is the smallest recorded in the Phoenix area since the second quarter of 1980. Favorable trends are working to reduce Arizona's rate of inflation. Together, prices for energy (transportation, and household fuels and utilities) and food account for 40.1 percent of the Consumer Price Index. Moderate increases in these three categories of transportation, household fuels and utilities, and food (1.3, 1.5, and 1.5 percent respectively) are helping to lessen overall inflation. Lower inflation rates, as currently observed in Phoenix and across the United States, have occurred after each of the recent recessions. This trend toward lower inflation should continue into early 1982.

This latest quarterly increase of 1.9 percent compares favorably to the increases posted for the United States as a whole (2.2 percent) and for the comparison cities of Chicago (1.9 percent) and Los Angeles (2.2 percent). The annual percentage change of 11.3 percent for Phoenix was higher than the annual rates for the United States (9.8 percent), Chicago (8.8 percent) and Los Angeles (7.3 percent).

The Consumer Price Index (CPI) for the Phoenix Metropolitan Area, upon which these inflation measures are based, is prepared by the Bureau of Business and Economic Research, College of Business Administration, at Arizona State University. The quarterly CPI is based upon comprehensive surveys undertaken by the Bureau of Business and Economic Research in cooperative cosponsorship with Valley National Bank.

In the *Food* category, Food at Home rose at the modest rate of 0.9 percent. Lower prices for Meats, Poultry, Fish, and Eggs over the three-month period contributed to the moderation in overall food prices. Prices of Fruits and Vegetables increased 6.2 percent, with smaller increases reported for Cereals and Bakery Products (2.3 percent), Dairy Products (1.7 percent) and Other Foods at Home (0.4 percent). The Phoenix area rise of 0.9 percent is lower than the Los Angeles area increase of 1.4 percent, but higher than the United States figure of 0.2 percent, and the Chicago decrease of -1.5 percent. Food Away From Home rose 2.7 percent, a rate higher than those of the United States, Chicago, and Los Angeles.

The price index for *Housing* increased by 2.7 percent in the second quarter of 1981. This was the smallest increase in *Housing* in the past nine months. A large increase in contracted mortgage interest costs of 10.0 percent was partially offset by a decrease in home purchase prices of -0.6 percent. Residential rents continued to increase slightly, at 1.3 percent in the second quarter. Fuel and other utility costs rose 1.5 percent; current costs show a change of only 2.5 percent from one year ago. In the last quarter, however, electricity costs were up 12.6 percent, while utility gas was down 19.9 percent.

Apparel and Upkeep rose at a quarterly rate of 1.0 percent. This quarterly change in the Phoenix area is lower than the increase posted by the nation as a whole (2.4 percent), by Chicago (2.3 percent), or by Los Angeles (4.7 percent). Women's and Girls' Apparel declined 2.9 percent, due primarily to exceptional sales in sportswear, suits, and jackets. Footwear prices continued to decline; the second quarter percentage change was -1.7 percent. The category of Men's and Boys' apparel showed its largest increase in more than a year, with a 4.1 percent gain.

Transportation posted a moderate 1.3 percent rise in the second quarter, after a large 5.4 percent change in the first quarter. In Private Transportation, prices for used cars and parts and equipment increased, but lower automobile insurance and repair costs resulted in a rise of only 1.2 percent. Gasoline and new car prices each increased by only 0.9 percent. Public Transportation costs continued to increase rapidly however, rising 3.5 percent in the latest quarter. Intercity bus fares, train fares, and airline fares were responsible for this quarter's increase. The annual rate of change for Public Transportation (29.0 percent) marks the largest annual increase of any of the CPI categories or subcategories. Phoenix area transportation costs compared favorably with the quarterly figures for the nation (2.6 percent) and with the other comparison cities of Chicago (2.0 percent) and Los Angeles (3.0 percent).

Medical Care in the Phoenix Metropolitan Area rose at a rate of 0.7 percent, with stable prices for physicians' services, hospital rooms, commercial health insurance, and other medical services. This marks the smallest quarterly increase for medical care in the past two years. Phoenix area medical care rates were substantially lower than the increases posted by the entire United States, Chicago, and Los Angeles, at 2.3 percent, 2.9 percent, and 1.5 percent respectively.

Entertainment costs rose by only 0.4 percent. Increases in previous quarters pushed the annual change up to 12.5 percent, however. Comparable entertainment annual increases are 8.0 percent for the United States, 9.2 percent for Chicago, and 10.2 percent for the Los Angeles area.

The cost of *Other Goods and Services* rose 2.7 percent during the second quarter of 1981. This gain is partially offset by last quarter's declining rate of -1.4 percent. The valley's annual rate in the category of *Other Goods and Services* was 7.4 percent — lower than the figures for the United States (9.9 percent), Chicago (12.5 percent), and Los Angeles (9.0 percent).

Note: The complete Consumer Price Index for Phoenix, the United States, and comparative cities is found on the next page.

METROPOLITAN PHOENIX CONSUMER PRICE INDEX
SECOND QUARTER, 1981
(1969 = 100)

Group	*First Quarter 1981 Index*	*Second Quarter 1981 Index*	*Percentage Change from Last Quarter*	*Percentage Change from One Year Ago*
ALL ITEMS	241.2	245.8	1.9	11.3
Food and Beverages	225.9	229.2	1.5	10.7
Food	231.3	234.7	1.5	11.0
Food at Home	242.8	245.0	0.9	10.8
Cereal and Bakery Products	237.3	242.8	2.3	10.7
Meats, Poultry, Fish, and Eggs	234.0	229.1	-2.1	6.3
Dairy Products	217.2	220.9	1.7	11.0
Fruits and Vegetables	243.3	258.4	6.2	21.2
Other Food at Home	270.1	271.3	0.4	10.0
Food Away from Home	208.3	213.8	2.7	11.2
Alcoholic Beverages	156.5	158.5	1.3	7.4
Housing	244.2	250.7	2.7	12.6
Shelter	258.0	266.0	3.1	15.4
Rent, Residential	179.3	181.7	1.3	3.4
Homeownership	273.7	283.2	3.5	18.4
Fuel and Other Utilities	247.9	251.8	1.5	2.5
Household Furnishings and Operations	197.8	201.1	1.7	7.5
Apparel and Upkeep	177.9	179.7	1.0	5.6
Apparel Commodities	168.1	168.1	0.0	2.6
Men's and Boys' Apparel	153.1	159.4	4.1	7.2
Women's and Girls' Apparel	164.9	160.3	-2.8	2.1
Footwear	204.9	201.5	-1.7	-6.6
Transportation	261.7	265.2	1.3	11.4
Private Transportation	258.9	261.9	1.2	10.4
Public Transportation	310.4	321.2	3.5	29.0
Medical Care	322.2	324.6	0.7	8.5
Entertainment	205.5	206.3	0.4	12.5
Other Goods and Services	223.1	229.2	2.7	7.4
Personal Care	220.3	225.2	2.3	7.1

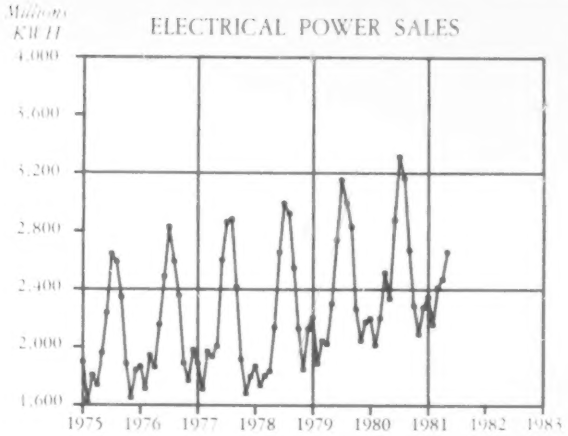
Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperative cosponsorship with Valley National Bank.

UNITED STATES AND COMPARATIVE CITIES
(1969 = 100)

	United States		*Chicago*		*Los Angeles*	
Group	*Percentage Change From Last Quarter*	*Percentage Change From One Year Ago*	*Percentage Change From Last Quarter*	*Percentage Change From One Year Ago*	*Percentage Change From Last Quarter*	*Percentage Change From One Year Ago*
ALL ITEMS	2.2	9.8	1.9	8.8	2.2	7.3
Food	0.6	8.8	-1.0	5.8	1.0	9.2
Food at Home	0.2	8.6	-1.5	6.5	1.4	9.7
Food Away From Home	1.6	9.3	0.1	4.5	0.4	8.4
Housing	2.7	10.2	2.8	9.8	2.1	5.6
Shelter	2.7	10.1	2.9	9.6	1.9	4.6
Fuel & Utilities	3.4	14.1	2.1	14.3	5.7	11.8
Household Furnishings & Operations	2.4	7.8	2.5	7.1	1.1	7.8
Apparel and Upkeep	2.4	5.0	2.3	1.0	4.7	5.3
Transportation	2.6	11.6	2.0	10.4	3.0	9.9
Medical Care	2.3	9.7	2.9	8.8	1.5	7.8
Entertainment	1.7	8.0	1.5	9.2	1.8	10.2
Other Goods and Services	2.1	9.9	3.6	12.5	3.6	9.0

Source: Metropolitan Phoenix data compiled by the Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperative cosponsorship with Valley National Bank; other data from U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

Arizona Economic Indicators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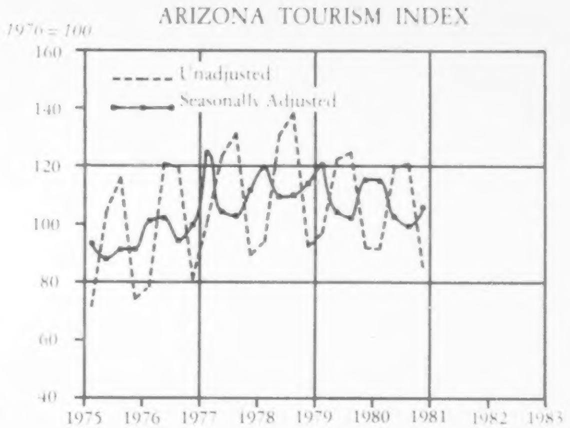
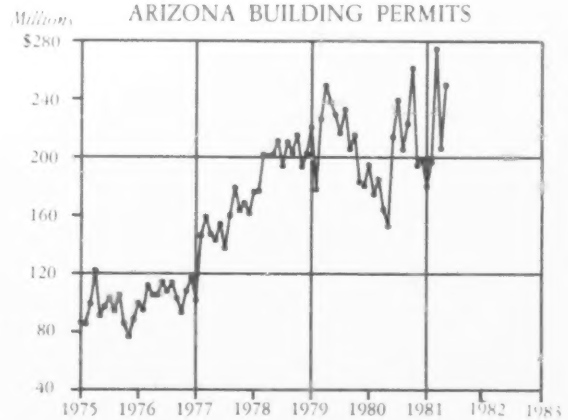

ARIZONA TOURISM INDEX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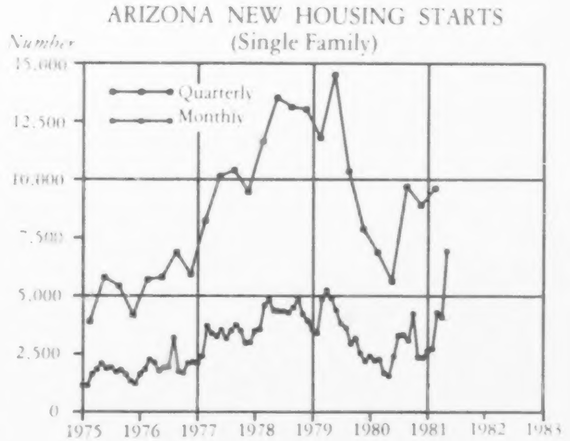
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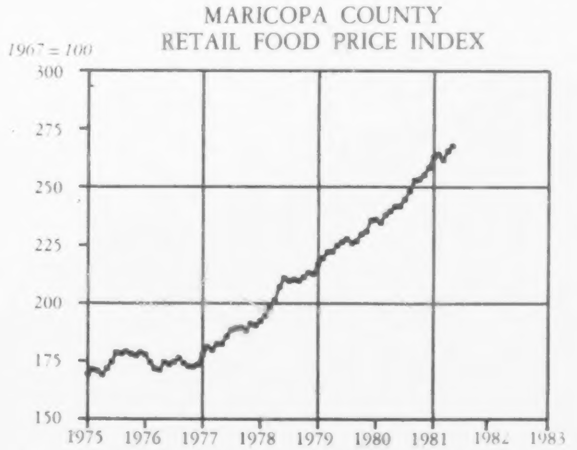
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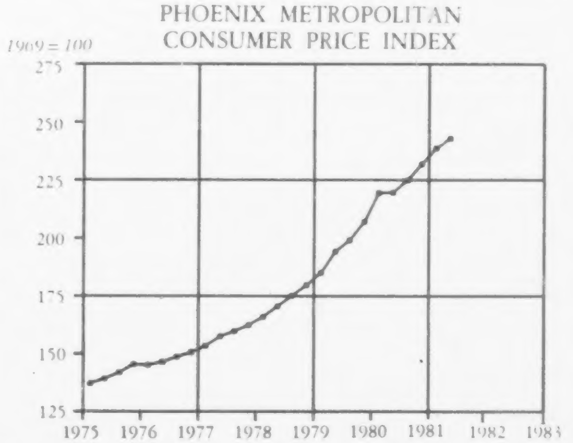
PHOENIX METROPOLITAN CONSUMER PRICE INDEX

Source: All data compiled by the Bureau of Business and Economic Research, College of Business Administration, Arizona State University.

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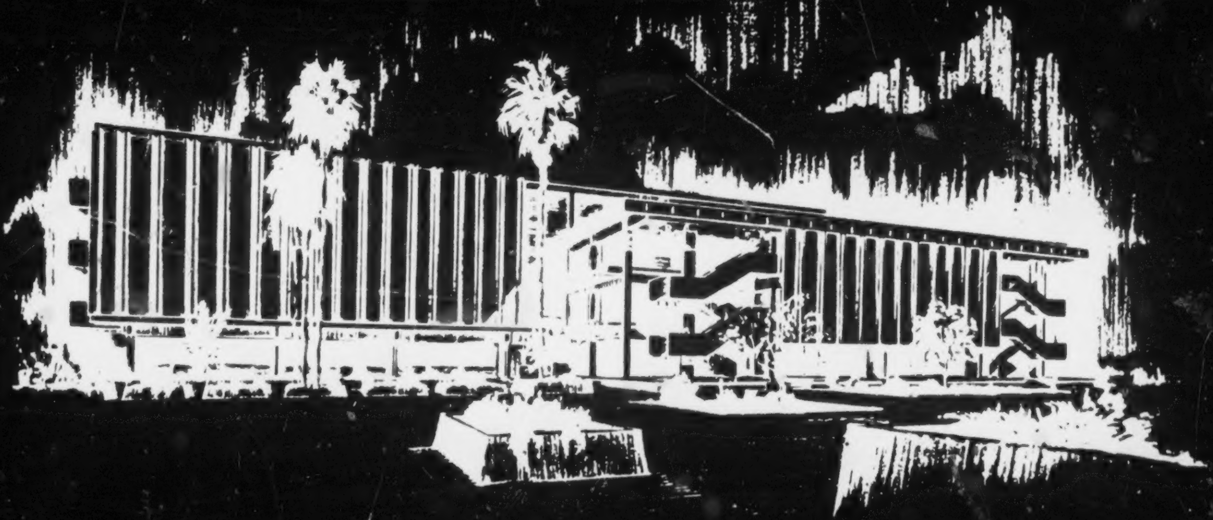

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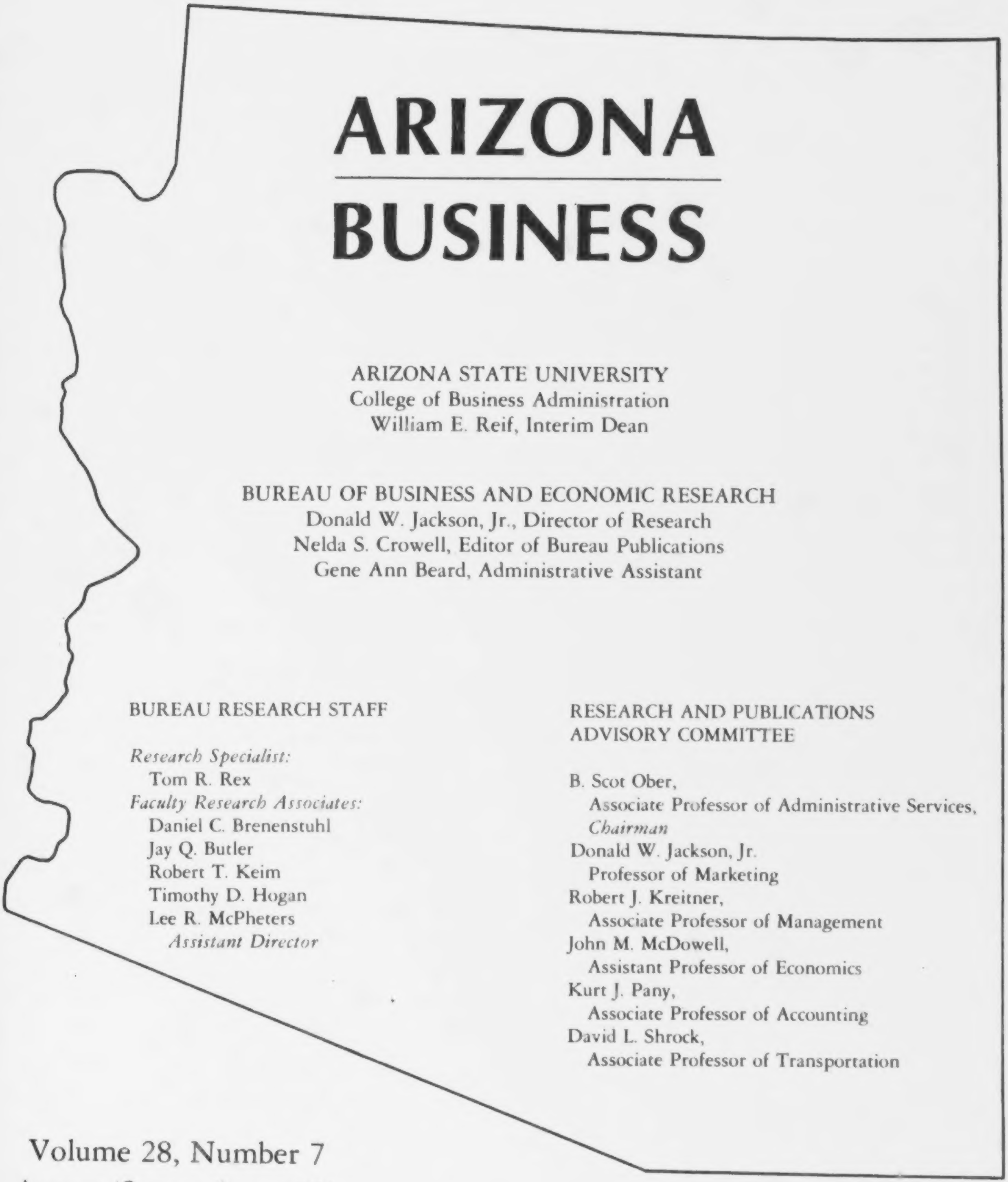

ARIZONA BUSINESS

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Report To The Reader

Editor's Note: *William E. Reif, Professor of Management, was recently appointed to the position of Interim Dean of the College of Business Administration at Arizona State University.*

Dr. Reif has been a faculty member in the ASU Department of Management since 1970 and has three books and over fifty articles to his credit. In addition, he has served as management consultant to a number of businesses and governmental organizations.

In the following remarks, Dr. Reif discusses some of the College's priorities for the 1981-1982 academic year.

Recently we announced a five-year goal for the ASU College of Business Administration to become one of the top colleges of business in the country. To achieve that goal, we will not only build upon our reputation as an excellent teaching institution, but we will also aim for national recognition of our research and other scholarly activities.

We also plan to expand the College's role as an active contributor to the community and to the state. Professional education must be a two-way street, however. We intend to assist the business community in getting even more involved in the College, and we plan to increase the opportunities for meaningful interaction among business people, faculty, and students.

We feel strongly about our responsibility as a valuable community resource, and we intend to improve the quality of educational and business services offered by the various units that serve the public: the Center for Executive Development, Productivity Institute, Real Estate Institute, Small Business Institute, and the Bureau of Business and Economic Research, which publishes *Arizona Business*.

The editorial policy of *Arizona Business* is geared to your needs and interests, and the articles will continue to keep you abreast of significant business concepts and strategies as well as useful management techniques. *Arizona Business* will also continue to provide you with statistical data that can improve the quality of your business decisions.

If you have suggestions for ways that we can increase the benefits you receive from *Arizona Business* or from any of the other programs in the College, please give us a call. We appreciate the opportunity to discuss them.

William E. Reif
Interim Dean

Mexican Petroleum and U.S.-Mexican Trade

JERRY R. LADMAN

In 1980, United States-Mexican trade (defined as the sum of exports and imports) again increased 48 percent, as it had done in 1979. With these sharp rises, Mexico now accounts for about 6 percent of total United States trade and is the United States' third most important trading partner after Canada and Japan. From the Mexican side, the United States continues to be that country's overwhelmingly most important trading partner, accounting for almost two-thirds of the value of foreign trade, a fact that is disturbing to Mexico because of the implications of excessive dependence on the United States.

The sharp increases in United States-Mexican trade are directly attributable to Mexico's recently discovered petroleum wealth. Since 1975, Mexican petroleum exports, and, since 1979, natural gas exports, have led the rapidly growing United States imports from its southern neighbor. Simultaneously, beginning in 1977, the petroleum-fueled growth of the Mexican economy has created a strong increase in demand for U.S. exports, especially in the supply of petroleum equipment and capital goods for the transportation and construction industries. The purpose of this article is to provide an overview of the ways Mexico's petroleum has affected United States-Mexican trade in the past several years and to make projections for the future. In order to address these questions it is first necessary to examine Mexico's petroleum wealth, the Mexican economy, and Mexico's plans for development. All of these factors explain recent trends and projections for trade between the countries.

Over the next several decades, hydrocarbons will continue to be a leading sector in the Mexican economy and will be the principal factor in determining trade between the United States and Mexico as it indirectly provides the basis for growth in other sectors of the economy.

Jerry R. Ladman is Professor of Economics in the College of Business Administration, Arizona State University. He is also the director of the ASU Center for Latin American Studies.

MEXICO'S PETROLEUM WEALTH

Mexico's petroleum industry, developed by international oil companies, was a leading sector in the Mexican economy in the early twentieth century. By 1921 Mexico was the world's largest exporter of hydrocarbons. However, the situation changed after the international oil companies shifted their investments to the Middle East and Venezuela and the Mexican government nationalized the industry in 1938. The petroleum industry did not develop the capacity to meet the rapidly growing domestic demand, and by the late 1960s, Mexico was a net importer of oil.

This was to change again, however, as Mexican petroleum engineers discovered huge reserves of hydrocarbons in southeastern Mexico in the mid-1960s. In 1972, when oil began to flow from these new fields, the

Mexican government reported that Mexico had proven reserves of 5.4 billion barrels of oil and natural gas equivalents and that production was 71,000 barrels per day. At the beginning of 1977, the figure for proven reserves had risen to 11.6 billion barrels. New discoveries continued, and in September of 1980, proven reserves were estimated at 250 billion barrels; production was 2.3 million barrels per day.[1] In that year Mexico ranked as the world's fifth largest producer of oil and the sixth largest repository of proven oil reserves. Output is expected to rise to at least 2.7 million barrels per day in 1981, and government plans are to produce 3.5 million barrels per day by 1985, 4.1 million per day by 1990.

Mexico's new petroleum wealth was to be a major turning point in the country's economic development. Although the new fields began producing in 1972, it was not until late 1976, when the current president José Lopez Portillo assumed office, that the levels of production and discoveries of additional reserves were sufficient to enable Mexico to fully realize the potential for long-term development that petroleum offered. The timing could not have been more propitious. In 1976 Mexico was in the midst of its worst political and economic crisis in three decades, a crisis that had grown out of the government's inability to correct the severe structural and distributional imbalances in the economy. The benefits of hydrocarbons provided the basis not only for easing the immediate crisis but also for raising hopes that petroleum-related growth could provide the means for longer-term structural reforms. The López Portillo administration was successful in both dimensions. Within one year, confidence in the Mexican economy was largely restored, and between May, 1978, and November, 1980, a series of national and sectoral economic plans were unfolded that were to chart the course of Mexico's development with petroleum.

THE IMBALANCES IN THE MEXICAN ECONOMY

By 1970 it had become very apparent that, in spite of Mexico's strong growth since World War II, the imbalances of this growth, combined with one of the world's most rapidly growing populations, had created a number of problems. First, open unemployment and underemployment affected 25 to 40 percent of the work force. Second, more than half of the income was concentrated in the hands of 20 percent of the population whereas half the population received less than 20 percent of the income. Third, more than half of the industrial production was concentrated in Mexico City to the neglect of most other areas. Commercial agriculture was concentrated in limited irrigated areas while the large bulk of the rural population lived in poverty. Fourth, the agricultural sector was unable to produce sufficient food to meet domestic demand, thus creating the need to import basic foodstuffs. Fifth, the highly protected Mexican manufacturing sector was inefficient and not competitive in world markets. Moreover, the sector was not heavily integrated; Mexico imported a very large proportion of its capital goods. Sixth, balance of payments problems had emerged due to chronic trade deficits, an overvalued peso, and the need to borrow heavily abroad. Finally, Mexico was very dependent upon foreign trade and foreign investment, especially with the United States.

López Portillo's predecessor, Luis Echeverría, who held office between 1970 and 1976, had unsuccessfully attacked these problems through ambitious programs that required heavy deficit financing and stronger government intervention. The deficit financing resulted in pernicious inflation that, in 1976, contributed to the first devaluation of the peso since 1954. This, combined with government intervention, antagonized the private industrial sector. The resultant political and economic instability had the country on the verge of chaos.

MEXICO'S LONG-TERM DEVELOPMENT PLANS

In May, 1978, the López Portillo administration began to announce a series of national plans that would be used to chart Mexico's growth with petroleum.[2] In that month the Plan for Urban Development was established. Its major thrust was to reduce the relative concentration of production and population in major urban centers by creating numerous growth poles in the nation. Fundamental to this objective is the goal of reducing the annual rate of population growth to 2.5 percent by 1982.[3]

The National Industrial Plan, issued in March, 1979, states that real gross domestic product should increase from 7 percent in 1979 to 10 percent by 1982 and should continue at that level until 1990. Furthermore, by 1982 new jobs should be created at the rate of 5 percent per year. The plan emphasizes regional diversification of industry and investment in the food processing and capital goods industries. Government policies of tax incentives, subsidies, protection from imports, technical assistance, and infrastructure development are to be used to encourage planned investment.[4]

In March, 1980, the government announced the Mexican Food System as its strategy to alleviate the need for food imports and to reduce poverty in rural areas.

The system provides government subsidies to small farmers to encourage them to produce basic foodstuffs. The goal is for Mexico to become self-sufficient in these products by 1985.[5]

In April, 1980, the Global Development Plan was set forth to tie together the previous plans and provide the overall framework for economic development in the last two years of the López Portillo administration. It emphasizes strong economic growth that creates jobs, improves income distribution, and reduces dependence on foreign nations, basically the United States.[6]

The National Energy Plan, issued in November 1980, details the López Portillo administration's plans for the role of petroleum in Mexico's economic development. The plan delineates the government's decision to conserve the hydrocarbon resources by calling for only moderate increases in petroleum production along with the development of alternate energy sources, including coal and electricity, in the near future and considerable nuclear power by the end of the century. Oil production is scheduled to rise to 3.5 million barrels per day in 1985 and to 4.1 million barrels per day in 1990. Most increases are scheduled for domestic consumption. Limits on oil exports are placed at 1.5 million barrels per day and natural gas at 300 million cubic feet. Moreover, in another move to reduce Mexico's dependence on the United States, the plan states that no single nation is to receive more than one-half of the oil exports.[7]

PERFORMANCE OF THE MEXICAN ECONOMY

In 1976 and 1977, during the economic crisis and the first year of the recovery, Mexican gross domestic product (GDP) grew very slowly averaging only a 2.6 percent increase in real terms for the two years. However, by 1978 sharp increases in government outlays for both current expenditures and capital investments, combined with greater private investment, fueled an economic boom. In 1978 and 1979, real GDP grew 7 and 8 percent respectively. In 1980 the boom tapered, and the rate of growth dropped to 7.4 percent. The petroleum and petrochemical sectors have been leading the growth of the Mexican economy. Construction, much of it associated with petroleum and public works, has been exceptionally strong. Electricity-generation and manufacturing grew at rates in excess of overall GDP. Especially important were increases in consumer durable goods and capital goods such as transportation equipment and machinery.

The problem sector continues to be agriculture with production declining in 1979 after rising in 1978. Especially significant were the declines in basic foods grown in rain-fed areas that suffered severe droughts. This created the need to import even more foods, which placed severe strains on the country's port and rail transportation facilities. Although production of basic foods rose again in 1980, food imports continued to rise due to strong domestic demand.

Inflation has abounded. Following devaluation, the consumer price index rose 27.2 percent in 1976 and 20.7 percent in 1977. Rises in the index settled at 16.2 and 20.0 percent in 1978 and 1979. In 1980, however, the strains of growth in the economy became apparent when prices rose 29.8 percent. An excess demand for goods and services, caused by increasing government deficits financed by central bank credit, has been the principal factor leading to the price rises.

In spite of the rapid growth in petroleum exports, Mexico has experienced an increasing deficit in its balance of trade since 1977. The strong demand for capital goods, plus rising consumer incomes, a growing population, and the need to import basic foods are the major contributors to the rise in imports. Simultaneously, however, the booming economy has attracted considerable foreign capital. Thus, the current account deficit has been more than matched by the increases in public and private external debt. However, with rising interest rates and increased debt, the debt servicing requirements have grown so rapidly that the net inflow of capital to Mexico is small.

The 31.3 percent increase in the Mexican federal budget programmed for 1981 should ensure continued economic expansion this year in the magnitude of 7.5 percent real growth of GDP. The government predicts that the price index will rise some 30 percent, but is willing to accept this in order to foster economic expansion and job creation. The 1981 budget emphasizes investments in agriculture and transportation in order to begin to break the bottlenecks in these sectors.

LONG-TERM OUTLOOK

Petroleum will be the fulcrum of the Mexican economy for at least the next two decades. It will contribute directly to income and will provide export revenues to finance imports. The indirect effects of creating income and jobs in the nonpetroleum sectors will be even more important and will serve as stimuli for both domestic and foreign investment.

As provided in the national plans, the government has assumed the responsibility for orchestrating the expanding economic activity in order to try to alleviate the inherent structural and distributional imbalances in the Mexican economy. The plans are ambitious and it is doubtful whether the economy is capable of reaching all the targets and the timetables established in the plans. Nevertheless the outlook for strong economic growth that moves in the direction of the goals set forth in the plans is promising. To be sure, there will be serious problems such as creating enough jobs to absorb the new entrants into the work force, supressing inflationary pressures in a rapidly expanding economy, coping with a growing external debt, and providing the regional transformation of the economy. Especially difficult will be the transformation of agriculture in the rainfed rural areas.

As it has already done since 1976, the continued growth of the Mexican economy will give rise to important changes in the composition and volume of Mexican foreign trade. The implications of these changes of United States-Mexican and Arizona-Mexican trade are significant. The following sections examine the changes in United States-Mexican trade since 1976, and trade prospects for the United States and Arizona with Mexico over the next two decades.

UNITED STATES-MEXICAN TRADE

The rapid growth in United States-Mexican trade between 1976 and 1980 is shown in Table 1. Over this five-year period both U.S. exports and imports more than tripled, measured in current dollars. U.S. imports increased more steadily than exports, however, because of the large annual increases in U.S. imports of petroleum and natural gas. In contrast, the levels of U.S. exports to Mexico followed the growth of the Mexican economy with sharp annual increases beginning with the rapid acceleration of the economy in 1978. Consequently, in the last three years U.S. exports have grown more rapidly than imports, a factor that has led to a significantly more favorable balance of trade for the United States.

Data for the first nine months of 1980 show that petroleum and natural gas accounted for more than half of U.S. imports from Mexico in that period.[8] Manufactured goods were the next most important category. Important lines were telecommunications and sound reproduction equipment, electrical machinery, silver, and wearing apparel. Products assembled under the Mexican Border Industrialization Program were important contributors to this category. The other major category of imports was food products including fresh fruits and vegetables, coffee, and seafood.

Apart from petroleum and natural gas, all of these products have been the mainstays of U.S. imports from Mexico over the 1970s.[9] It is noteworthy, however, that the relative importance of manufactured goods has increased compared to food products reflecting Mexico's increased capabilities to export this class of goods.

TABLE 1

U.S. TRADE WITH MEXICO, 1976-1980
(Millions of Dollars)

	U.S. Exports	*U.S. Imports*	*U.S. Balance of Trade*
1976	$ 4,990	$ 3,598	$1,392
1977	4,822	4,694	128
1978	6,680	6,074	606
1979	9,847	8,813	1,034
1980	15,145[a]	12,520[a]	2,625

[a] Preliminary figures.

Source: U.S. Department of Commerce.

Over the same nine-month period in 1980, manufactured goods accounted for about three-fourths of U.S. exports to Mexico. The most important goods were transportation equipment, including parts used in assembly operations and repairs, airplanes, motors and tractors. Construction and mining equipment, electronic components, chemicals and iron and steel products were other manufactured goods with large sales. Food, especially corn, wheat, and soybeans, was of particular importance, accounting for another 12 percent of the total. These imports were necessary because of the chronic inability of the Mexican agricultural sector to raise production at a rate commensurate with the growing internal demand, a condition which was exacerbated by the poor growing season in 1979. The pattern of U.S. exports in 1980 was similar to that existing over the decade of the 1970s, although the relative importance of agricultural products has increased slightly.

BILATERAL TRADE ISSUES

Up to now, apart from the Tomato War, there has been little open conflict between the United States and Mexico on bilateral trade issues.[10] With the expansion of the Mexican manufacturing sector it is very likely that increasingly larger numbers of Mexican products will compete with U.S. goods both in the United States and abroad. As trade volume increases and the composition of trade changes, more conflicts can be expected. Indeed in the future it is very likely that trade issues will be at the center of United States-Mexican relations and will overshadow the issues of energy and undocumented workers.

The need to develop a mechanism to guide trade between the two countries is apparent. Over the past several years the United States encouraged Mexico to affiliate with the General Agreement on Tariffs and Trade (GATT), a measure that would have forced Mexico to take steps toward removing extensive trade barriers and subsidies for exporters. U.S. officials worked closely with counterparts from Mexico to work out the arrangements, and it appeared that Mexico would affiliate with GATT. However, in March, 1980, López Portillo announced that Mexico had decided not to join GATT, at least for the next few years. Clearly it was decided that it was best for Mexico to maintain its options to protect and subsidize domestic industry. This decision leaves the two countries without any formal framework to govern bilateral trade. Conflicts can be expected to arise, particularly as Mexican products increasingly compete with U.S. manufacturers. In particular, U.S. legislation provides for the assessment of countervailing duties on foreign imports if it is adjudged that foreign subsidies to exports harm domestic U.S. producers. Since Mexico's development plans call for many subsidies, conflicts with domestic U.S. producers are likely to occur.

PROSPECTS FOR TRADE

Over the next several decades, hydrocarbons will continue to be a leading sector in the Mexican economy and will be the principal factor in determining trade between the two countries as it indirectly provides the basis for growth in other sectors of the economy. The manner in which it plays this role will depend, however, on the rates and patterns of economic growth in the other sectors as well as on the success of the government in reducing external dependence on the United States.

Future U.S. imports from Mexico are not expected to increase as rapidly as they did in the past five years because of the Mexican government's decisions to limit daily hydrocarbon exports to 300 million cubic feet of natural gas, and 1.5 million barrels of petroleum. No more than 50 percent of the petroleum can be sold to any single country. Currently the United States receives all of Mexico's natural gas exports and about 75 percent of its oil exports. Since present levels of U.S. imports of gas and petroleum are only slightly below the new levels, only small increases in volume are to be expected in future years unless the Mexican government decides to increase the export limits. Such a decision does not appear likely during the remaining two years of the López Portillo administration but could come at a later time if Mexico needs to finance imports and service foreign debt.

United States imports of electronic goods, wearing apparel and other products assembled in plants under the Border Industrialization Program should continue to grow, especially in periods of strong economic growth in the United States. However, to counteract this trend, as Mexican wages continue to rise due to inflation, an increasing number of U.S. firms may choose to locate plants in other countries that have less expensive labor. Mexico can be expected to continue as a major supplier of winter fruits and vegetables and seafood. In the longer run, relatively more U.S. imports of manufactured goods are to be expected as Mexico diversifies and deepens its industrial capacity and becomes more competitive in export markets.

In the next few years the rapidly growing Mexican economy will create a continued strong demand for U.S. exports of capital and intermediate goods, especially in the construction, petroleum, transportation, and high technology sectors. Mexico's demand for agricultural imports from the United States will largely depend on the success of the government's plans to revitalize small-farmer agriculture, a matter that at best will require a number of years. In the longer run, however, as the Mexican economy becomes more developed and more self-sufficient in producing capital and intermediate goods, the composition of exports can be expected to change with more demand for high technology goods and less demand for construction, mining and transportation equipment as well as agricultural products.

United States exports to Mexico will be affected by Mexico's commitment to diminish its dependence on the United States and diversify trade. In the last year Mexico has increasingly used petroleum sales to negotiate favorable arrangements for imports of industrial and agricultural goods, technology, and financing from other countries, especially those of Western Europe, Canada and Japan. While such efforts will undoubtedly decrease the relative importance of U.S. exports among total Mexican imports, the expected absolute gains to the United States are promising due to the well-established marketing outlets and extensive foreign investment of U.S. firms in Mexico.

The trends will favor increases in United States-Mexican trade by Arizona enterprises. The Arizona industrial sector specializes in high technology goods such as electronics and technical equipment that are almost certain to be in greater demand as the Mexican economy expands. Arizona has never been the origin of major exports of raw materials and agricultural products to Mexico and will not be harmed by the probable shift of Mexican demand away from these products. Nogales will continue to be a port of entry for a number of products, such as winter vegetables, that are transshipped through Arizona, an activity that will also benefit the state.

In conclusion, the growing strength of the Mexican economy will undoubtedly favor U.S. trade with our southern neighbor. Furthermore, Arizonans can anticipate a larger amount of trade, a fact that will tie the state closer to Mexico and will broaden the relationships that have more traditionally depended upon agriculture, commerce, financing, and tourism.

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[1] "Cuarto Informe Presidencial," *El Mercado de Valores* 40 (September 8, 1980): 878.

[2] For a good overview of the Mexican plans see Calvin P. Blair, "Economic Development Planning in Mexico: A New Penchant for Planning" Technical Papers Series - No. 26, Office for Public Sector Studies, Institute of Latin American Studies, The University of Texas at Austin, 1980.

[3] "Plan Nacional de Desarrollo Urbano Version Abreviada," *El Mercado de Valores* 38 (June 19, 1978): 477 ff.

[4] "Plan Nacional de Desarrollo Industrial," *El Mercado de Valores* 39 (July 23, 1979): 1-67.

[5] "En Marcha el Sistema Alimentario Mexicano," *El Mercado de Valores* 40 (June 9, 1980): 557-558, 572.

[6] "Plan Global de Desarrollo 1980-1982, Version Abreviada," *El Mercado de Valores* 40 (April 21, 1980): 379-382.

[7] "Programa de Energia," *El Mercado de Valores* 40 (November 24, 1980): 1165-1182.

[8] Preliminary data U.S. Department of Commerce, mimeo n.d.

[9] For detailed information on U.S. imports from and exports to Mexico see: U.S. Department of Commerce, Bureau of the Census, *U.S. General Imports* and *U.S. General Exports*, prepared annually.

[10] The so-called Tomato War refers to the attempts since the late 1960s by Florida tomato growers to restrict the entry of Mexican-grown tomatoes into the United States because of the success of Mexican growers in capturing large shares of the U.S. market for winter tomatoes.

PROGRAM ON MEXICO

"Mexico: Economic Overview and Forecast" will be the theme of a program on November 17 from 3:30 to 5:30 p.m. in the Tower Suite of the Valley National Bank Center, 241 N. Central Ave. Sponsors of the program are the ASU Center for Executive Development and the ASU Center for Latin American Studies.

Featured speaker is Alonso Ibanez y Duran, Director of the Center for Private Sector Economic Research, Mexico City. He will also lead a discussion on investment opportunities and the new political changes affecting monetary conditions in Mexico.

Cost is $25 per participant. For reservations, call the ASU Center for Executive Development, 965-3441. Enrollment is limited.

Arizona Exports: Trends and Opportunities

MARTI J. RHEA
JOSEF C. BRADA

The decade of the 1970s witnessed an important increase in the internationalization of the U.S. economy. While U.S. gross national product (GNP) in current dollars increased by 9 percent per year, U.S. exports grew at an annual rate of 16 percent and imports at 18 percent. As a result, foreign trade flows have increased in relation to domestic economic activity with exports currently equal to 8 percent of GNP and imports to 9 percent. The United States has become more interdependent with the rest of the world not only in a quantitative sense but also qualitatively, including such trends as:

- The need for American firms to be more aware of foreign market developments, both in terms of export opportunities and in terms of the evolution of foreign competitors;
- Greater reliance of the United States on imported oil and many other raw materials;
- A direct relationship between the international strength of the dollar and inflation, since increases in the international value of the dollar reduce the prices of imported consumer goods and lower the costs of firms dependent on imported inputs.

The development of Arizona's involvement in the world economy has paralleled those outlined for the national economy. The economic welfare of Arizonans is increasingly dependent on developments in international markets, and the further development of Arizona's export potential will have an important influence on statewide economic development in future years. The objective of this article is to review the structure and evolution of Arizona's export trade in recent years and to identify those trends in the international economy that will have a significant impact on the growth of Arizona's exports in the future.

Manufacturing is Arizona's most important export sector, followed by tourism, mining, and agriculture. An important effect of these exports is the creation of additional employment opportunities.

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THE DATA BASE

A serious obstacle to the evaluation of Arizona's export performance is the lack of adequate data. The U.S. Department of Agriculture compiles data on Arizona exports of agricultural commodities, but no comparable compilation of data on manufacturing exports exists. Consequently this analysis of Arizona exports in the nonagricultural sectors is based on survey data obtained from the Arizona Office of Economic Planning and Development (OEPAD). OEPAD's data are based on a survey of the export activities of Arizona businesses that is mailed out to 400 to 500 Arizona businesses each year. In 1977, of the 80 firms responding to the survey, 30 indicated that they were engaged in exporting. In 1979, 75 of 100 respondents were engaged in exporting. Since the Phoenix Chamber of Commerce has estimated that some 300 Arizona firms undertook some export activities in 1977, and 400 in 1979, the OEPAD survey results surely understate the volume of Arizona's nonagricultural exports.[1] However, the small proportion of firms responding to the OEPAD survey should not be taken to mean that a similarly low volume of exports is covered by the survey. This is because in Arizona, as in the United States as a whole, a relatively small number of firms accounts for a high proportion of total exports. OEPAD estimates that eleven Arizona firms, all included in the survey, account for about 80 percent of the state's manufacturing exports. As expected, these exporters are located in the state's major metropolitan areas. Motorola, Honeywell, Sperry Flight Systems, Goodyear Aerospace, AiResearch Manufacturing, ITT Courier, ITT Cannon and Talley Industries are located in Phoenix while International Business Machines, Burr-Brown Research, and Gates Learjet are located in Tucson.[2]

ARIZONA'S EXPORT PERFORMANCE, 1977-1979

The increasing importance of foreign markets for the Arizona economy is evident from Table 1. Between 1977 and 1979, Arizona exports grew more rapidly than did the total output of the exporting sectors, reflecting a greater reliance by Arizona producers on foreign markets. The largest dollar increase in exports was in manufacturing, which also accounts for the largest share of total Arizona exports. The most rapid expansion of exports, however, occurred in the mining industry, which replaced agriculture as the third largest export sector in Arizona. In contrast to mining and manufacturing, which enjoyed export growth rates in excess of the rate of growth of total output, agriculture and tourism (expenditures by foreign visitors to Arizona) expanded their output more rapidly than their exports. Nevertheless, even for these sectors, exports in 1979 accounted for 21 and 14 percent of total sales respectively.

Manufacturing. Manufacturing is the most important export sector in Arizona, accounting for nearly one-half of the total value of Arizona exports and for 1 percent of total U.S. merchandise exports. The increasing export orientation of Arizona manufacturing, evident from Table 1, is part of a long-term internationalization of this sector. Betweeen 1972 and 1979, Arizona's manufacturing output increased by 155 percent while manufacturing exports increased by 320 percent.

Although manufacturing exports from Arizona include a wide range of goods, the largest proportion consists of high technology equipment and components. A study of the composition of Arizona manufacturing exports by the U.S. Department of Commerce published in 1976 found that 85 percent of such exports consisted of machinery, electronic parts and equipment, and transportation equipment. Such a commodity composition of manufacturing exports is advantageous in that high technology exports tend to be less sensitive to price changes caused by exchange rate fluctuations and to the vagaries of the business cycle in foreign markets.

On the other hand, firms that compete on the basis of new technology often find that as their technology becomes disseminated abroad, foreign firms are often able to capture a large part of the market through

TABLE 1

ARIZONA OUTPUT AND EXPORTS BY SECTOR
1977 and 1979

	Total Output (000)		*Percentage Increase*	*Exports (000)*		*Percentage Increase*
	1977	*1979*	*1977-79*	*1977*	*1979*	*1977-79*
Agriculture	$1,165,248	$ 1,732,200	48.7	$ 285,000	$ 371,700	30.4
Manufacturing[a]	3,387,600	4,800,000	41.7	725,000	1,103,000	52.1
Mining	1,621,256	2,487,955	53.5	218,000	430,777	97.6
Tourism	2,884,637	4,040,724	40.1	406,000	550,000	35.5
Total	$9,058,741	$13,060,879	44.2	$1,634,000	$2,455,477	50.3

[a] Value added.

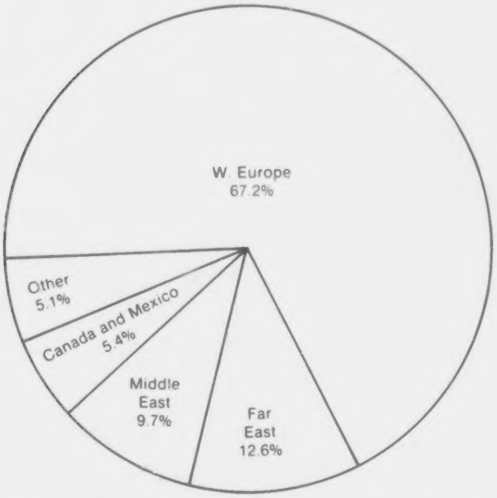
Sources: Total output from Valley National Bank of Arizona, *Arizona Statistical Review*, 36th Annual Edition, September, 1980. Exports of agriculture from U.S. Department of Agriculture, *Foreign Agricultural Trade of the United States*, February 1978 and March/April 1980. Remaining export data estimated by Arizona Office of Economic Planning and Development.

imitation. Consequently, the continued growth of high technology exports from Arizona is dependent on continuing innovation in the manufacturing sector and on the ability of the Arizona labor force to adjust its skills to what are likely to be rapidly changing skill requirements on the part of producers. Clearly both the fostering of innovation and the development of a labor force capable of absorbing new skills calls for the development of close links between private industry, state government, and the state's educational institutions.

The advanced technological level of Arizona's manufacturing exports is also reflected in their geographic distribution as shown in Figure I. Arizona's largest customers are the industrialized countries of Western Europe, which account for two-thirds of Arizona's exports of manufactured goods. Although Western Europe also accounts for the largest share of total United States share of manufactured exports. Arizona's dependence on West European markets is twice that of the national average. Among the West European countries, France is the largest customer, followed by the Federal Republic of Germany and the United Kingdom. Indeed these three countries plus Japan account for 68 percent of all Arizona manufactured exports. These four countries are among the most technologically advanced and thus represent excellent markets for Arizona's high technology products.

FIGURE 1

SHARE OF IMPORTING REGIONS IN TOTAL ARIZONA MANUFACTURING EXPORTS, 1979
(Percentage)



Source: Arizona Office of Economic Planning and Development.

Another area of increasing export opportunities for Arizona manufactured goods is the Middle East, because of the desire and ability of the oil exporting countries to promote imports of advanced equipment for extensive development projects. Possibly because of climatic similarities between Arizona and the Middle East and the consequent suitability of Arizona products for use in that region, the proportion of Arizona exports of manufactured goods going to Middle East countries increased from 5.5 percent in 1977 to 9.7 percent in 1979. This is a relatively favorable performance when compared with the 6.1 percent of total United States exports destined for this region.

Finally, it is noted that despite Arizona's close proximity to Mexico, the share of exports to that country and to Canada are below the national average. Arizona manufacturers, particularly those not specializing in high technology products, may be neglecting a nearby and potentially large and profitable market.

Tourism. Expenditures by foreign visitors to Arizona increased by 26 percent between 1977 and 1979, and represent the second largest source of foreign earnings for the state. As Table 2 shows, the most important segment of this market was Mexican nationals, followed by Canadians. These two groups of visitors accounted for 94 percent of the total foreign tourist expenditures in Arizona in 1977, and 88 percent in 1979. The preponderance of Mexican visitors is particularly important for the Arizona-Mexican border communities such as Nogales, Douglas, and Yuma. Expenditures by Mexican visitors often go beyond tourist type expenditures to include groceries, clothing, gasoline, and gifts.[3]

Of particular interest is the growth in the category of "other" foreign visitors. The majority of such visitors are probably tourists from Japan and Western Europe and thus tend to be relatively affluent tourists able to

TABLE 2

ESTIMATES OF EXPENDITURES OF FOREIGN VISITORS IN ARIZONA, 1977 and 1979
(Excluding Transportation)

	1977		*1979*	
Nationality	*Expenditures (000)*	*Percentage of Total*	*Expenditures (000)*	*Percentage of Total*
Mexican	$315,000	78	$408,000	74
Canadian	65,000	16	77,000	14
Others	26,000	6	65,000	12
Total	$406,000	100	$550,000	100

Source: Estimates compiled by the Arizona Office of Economic Planning and Development.

afford quality accommodations. Although this category is still relatively small, the share of these tourists in total foreign tourist expenditures in Arizona doubled between 1977 and 1979. Possibly a greater effort at promoting Arizona as a tourist destination among Japanese and West European travelers might yield a further expansion of this segment of the tourist market.

Mining. The mining industry experienced the most rapid rate of growth of production and of exports of the four sectors discussed in this article (see Table 3). A large part of this upsurge in exports can be attributed to improvements in the international economy that led to an increase in demand for copper, the state's largest mineral export, and to increases in the price of copper from 66.8¢/lb. in 1977, to 93¢/lb. in 1979, as well as to increases in the prices of other metals.

Copper accounted for over one-half of total Arizona mineral exports. Although only 15 percent of Arizona's copper production was exported in 1979, these exports accounted for almost two-thirds of U.S. copper exports. Gold and silver are also produced in Arizona and exported. However, the bulk of the output of these two metals is a by-product of copper smelting and consequently their production depends to a large extent on the domestic and international demand for copper rather than on gold and silver prices directly.

Historically, production and exports of the mining sector have been less stable than those of the other sectors. In part this has been due to labor strife in the industry. However, the major cause has been the international volatility of prices and the sensitivity of demand for copper on business conditions. Nevertheless, because an increase in copper prices is predicted by industry analysts for 1981 and 1982, Arizona's copper exports should enjoy rapid growth in the near future.

Agriculture. Although agriculture is the smallest of the four sectors in terms of the value of exports, the specialized nature of Arizona's agricultural production means that Arizona agriculture is both highly dependent on foreign markets and that Arizona exports of certain crops account for a significant proportion of United States exports (see Table 4). Arizona is the fourth largest state in exports of cotton and cottonseed oil. An estimated 90 percent of the state's cotton crop is exported, mainly to Japan, Taiwan, and the People's Republic of China.

One third of the Arizona citrus crop and 60 percent of the wheat crop are also exported as is a large proportion of the state's meat production. Exports of food products, in contrast to cotton exports, however, suffer from protectionist policies imposed by Japan and other potential markets in the Pacific Basin. These countries seek to protect their domestic agricultural producers by maintaining high food prices and excluding low-cost imports from the United States. Successful efforts to reduce tariff and nontariff barriers to trade in agricultural products among the Pacific Basin countries would do much to stimulate exports of agricultural products from Arizona.

EMPLOYMENT AND INCOME

The most direct effect of the export performance of Arizona businesses is through additional employment opportunities for Arizona residents. Table 5 presents estimates by OEPAD and the Phoenix District Office of the U.S. Department of Commerce of the number of jobs in Arizona directly related to export activities. In 1979, 45,350 individuals in Arizona held jobs directly related to export activities. The expansion of Arizona exports at

TABLE 3

ESTIMATES OF MAJOR ARIZONA MINERAL EXPORTS, 1977 and 1979
(000)

	1977			*1979*		
Product	*Arizona*[1] *Exports*	*Percentage*[2] *of Arizona Production*	*Percentage of*[3] *U.S. Exports*	*Arizona*[1] *Exports*	*Percentage*[2] *of Arizona Production*	*Percentage of*[3] *U.S. Exports*
Copper	$127,577	10	62	$277,500	15	65
Gold	10,000	70	9	30,762	6	1
Molybdenum	66,382	57	27	118,300	47	25
Silver	14,076	45	18	4,215	52	19
Total	$218,035	16	21	$430,777	16	16

Sources: [1] Arizona Office of Economic Planning and Development.
[2] Derived from *Minerals in the Economy of Arizona.* Bureau of Mines, U.S. Department of the Interior, 1977 and 1979.
[3] Derived from *Mineral Industry Surveys.* Bureau of Mines, U.S. Department of the Interior, 1977 and 1979.

TABLE 4

MAJOR ARIZONA AGRICULTURAL EXPORTS, 1977 and 1979

	1977		1979	
Commodity	*Arizona Exports (000)*	*Percentage of U.S. Exports*	*Arizona Exports (1000 U.S. $)*	*Percentage of U.S. Exports*
Cotton	$125,000	8	$197,300	10
Citrus Fruits	20,000	2	41,200	4
Wheat and Flour	45,000	1	23,100	*
Cottonseed Oil	16,000	9	20,000	10
Hides and Skins	10,000	1	16,300	1
Feed Grains	15,000	*	13,500	*
Vegetables	13,000	2	13,000	2
Lard and Tallow	9,000	2	11,400	2
Meat	6,000	1	10,400	1
Other	26,000	1	25,500	1
Total	$285,000	1	$371,700	1

*Less than ½ of 1 percent.

Source: Foreign Agricultural Trade of the United States. Economics, Statistics and Cooperative Services, U.S. Department of Agriculture, February 1978 and March/April 1980.

TABLE 5

EXPORT-RELATED EMPLOYMENT IN ARIZONA, 1977 and 1979

	Number of Export-Related Jobs		
Sector	*1977*	*1979*	*Increase in Employment Per $100,000 Increase in Exports*
Agriculture	5,500	6,450	1.1
Manufacturing	18,400	24,000	1.5
Mining	3,400	3,900	0.2
Tourism	9,300	11,000	1.2
Total	36,600	45,350	1.1

Sources: Arizona Office of Economic Planning and Development and Phoenix District Office of the United States Department of Commerce. Column 3 calculated from Columns 1 and 2 and Table 1.

a rate higher than Arizona production thus indicates that exports have had a beneficial effect on employment opportunities for Arizona workers. According to the data presented in Table 5, export growth between 1977 and 1979 was responsible for the creation of 8,750 additional jobs in Arizona with over half of these in the manufacturing sector.

Table 5 also provides information on the number of additional jobs created by a $100,000 increase in exports in each of the sectors. Employment in manufacturing is most responsive to increases in export sales with each $100,000 increase in exports creating 1.5 new employment opportunities. Since the average annual wage paid to manufacturing employees covered by Arizona unemployment compensation laws was $15,468 in 1979, a $100,000 increase in manufacturing exports leads directly to an increase of over $23,000 in wages, increased tax revenues for the state, and higher sales and profits for businesses selling consumer goods and services. Tourism and agriculture follow close behind manufacturing in the job-creating effect of exports with 1.2 and 1.1 jobs created per $100,000 increase in exports. However, since wages in the service sector were only $10,125 and $8,322 in agriculture and forestry in 1979, the income-generating effect of export expansion in these sectors is correspondingly smaller than that in manufacturing. Mining had a much lower 0.23 jobs created per $100,000 in increased exports. This is primarily due to the fact that between 1977 and 1979, the bulk of the increase in mineral exports was the result of increased prices rather than of an increased volume of production. Consequently, it is not surprising that the mining sector experienced large export increases with only a moderate increase in employment. Offsetting the low job-creation effect of mining exports is the relatively high annual wage of $21,262 in this sector.

In evaluating the effect of export growth on Arizona incomes and employment, secondary effects should also be added to the direct effects discussed here. Greater employment opportunities and higher incomes provide greater demand by workers for housing and consumer goods and services which have job-creating effects throughout the state economy. Increased export-related incomes and profits also increase state revenues, thus leading to the expansion of public sector employment. Finally, because exports must be transported out of the state, export activities create job opportunities in transportation, communications, and banking.

CONCLUSIONS AND RECOMMENDATIONS

Exports play a vital role in the growth and welfare of the Arizona economy, with all sectors of the economy being dependent on foreign markets for a significant proportion of their sales. In keeping with the national trend, this dependence on foreign markets has grown in recent years. Nevertheless, if exports are to continue to play a positive role in Arizona's economic development, the following recommendations need to be considered:

- Arizona businesses, government, and educational institutions must work together to foster the innovation and labor skills that are necessary for sustained growth in high technology exports.
- More Arizona businesses, especially small firms, must increase their awareness of international trade opportunities and design appropriate marketing programs to address these export markets.
- Arizonans must become more involved in efforts to reduce foreign tariff and nontariff barriers that limit the trade potential of the state's export products, particularly agricultural commodities.
- A continued effort must be made to gather more and better data on Arizona's international activities so that better analyses and forecasts can be provided.

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[1] Phoenix Chamber of Commerce, *Directory of Arizona Manufacturers*, Phoenix, 1978.

[2] "Most Arizona Firms Afraid to Tap Export Market, Expert Says," *The Arizona Republic*, August 26, 1979, p.D-1.

[3] Arizona Office of Economic Planning and Development, *Arizona Exports: A Growth Sector for Arizona's Economy*, Phoenix, 1978.

International Banking in the 1980s: A Global and Regional Perspective

FRANK TUZZOLINO
T.F. GRIFFITH

International banking, both by U.S. and foreign banks, has grown rapidly in the past two decades, a boom that has been very profitable for its major participants. The major factor behind this growth has been the increasing interdependence of the world's economies, as reflected in the growth of world trade; the investment of multinational corporations; the economic development of poorer countries; and the imbalance in world payments, fueled by the Organization of Petroleum Exporting Countries (OPEC).

Naturally much of the increased payment flow associated with these events occurs through banks. Yet, such expansion carries with it both opportunities and risks.

The world marketplace is no longer the dollar dominated arena it once was. The face of U.S. banking and finance is changing fast, eroding the long-standing precepts about what constitutes a bank and a thrift institution, the services they can offer, and where each can do business.

Coupled with this transformation of the domestic financial industry has been a flurry of foreign takeovers of U.S. banks. Foreign banks have over 300 U.S. branches and agencies of their home offices, accounting for 15 percent of U.S. business loans. At the end of the first quarter, 1980, 109 American banks had at least 10 percent foreign ownership; 26 are wholly foreign-owned.[1] More recent examples of this foreign influx inlcude:

- Holland's Algemen Bank's purchase of LaSalle National Bank, Chicago.
- British Midland Bank's $820 million successful bid for California's Crocker National Bank.
- Hong Kong and Shanghai Banking Corporation's takeover of Marine Midland Bank of Buffalo, New York.
- Banque Nationale de Paris' acquisition of Bank of the West, San Jose, California.

Although the International Banking Act of 1978 (Table 1) has brought foreign and domestic banks nearer to a competitive par, the evolving role of regional banks in this international scenario remains clouded. The intent in this article is to shed some light on these emerging issues, especially from the perspective of banks in Arizona. In particular, the article addresses, in a global and regional context, the growth of international banking; major international banking activities; organizational approaches to international banking; and international banking prospects for the 1980s.

International banking activities have become increasingly important over the past twenty years. This growth is expected to slow somewhat during the 1980s, but the pattern may evolve from domination by a few banks to a more competitive market.

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TABLE 1

PROVISIONS OF THE INTERNATIONAL BANKING ACT OF 1978

- Limits the interstate branching of foreign banks.
- Provides for federal licensing of branches and agencies of foreign banks.
- Authorizes Federal Reserve Board to impose reserve requirements on branches and agencies of foreign banks.
- Gives broader powers to Edge Act corporations to compete more effectively with foreign banks.
- Subjects foreign banks operating branches and agencies to the nonbanking prohibitions of the United States Bank Holding Company Act.

Source: International Letter Federal Reserve Bank of Chicago, May 22, 1981.

INTERNATIONAL BANKING EMERGES

During the nation's early years, most American banks were reluctant to go international, a consequence of America's isolationism at the time, as well as its limited role in international trade through the early 1900s. United States regulation was another obstacle to overseas banking. For example, any form of branch banking (by national banks) was prohibited before the passage of the Federal Reserve Act of 1913. Prior to this legislation, such traditional international banking activities as foreign exchange trading and the sale of letters of credit were pursued from domestic offices, with limited banking presence abroad.

Once the doors were opened to foreign branching by national banks, a few U.S. banks quickly responded. One of the more aggressive then (and now) was Citibank, which as early as 1918 had thirty-seven foreign offices. Additional impetus was provided by the Edge Act of 1919, which enabled United States banks to set up special subsidiaries (informally called "Edges") to engage in international activities generally not permitted domestically, such as:

- Accepting deposits from foreign parties
- Issuing or confirming letters of credit
- Creating bankers acceptances
- International lending
- Foreign exchange trading
- International investment banking

Although the enabling legislation of this Wilsonian era was a watershed for international banking, the emphasis by American banks upon such operations has become increasingly important in the past two decades.[2] More American banks are involved in more countries via more branches with more loan activity than ever before (Table 2).

TABLE 2

FOREIGN BRANCHES OF U.S. BANKS

Year	*U.S. Banks With Branches*	*Number of Branches*	*Total Assets of Overseas Branches (Billions)* [a]
1965	13	211	$ 8.9
1967	15	295	15.3
1969	53	459	35.3
1970	79	536	46.5
1971	91	583	59.8
1972	108	627	78.2
1973	122	697	121.9
1974	125	734	151.9
1975	126	762	176.5
1976	127	731	219.4
1977	124	730	258.9
1978	137	761	306.8
1979	139	779	364.2

[a] Not adjusted for inflation.

Source: Christopher M. Korth, "The Evolving Role of U.S. Banks in International Finance," *The Bankers Magazine*, Jan. 1980, p. 69.

The sheer numbers of foreign bank branches may be misleading, however, in that the majority of U.S. international banking is conducted by a small group of the largest banks (the "majors," or money-center banks). Of the 139 banks with foreign branches, over 90 are no more than "shell branches" in offshore money markets (particularly tax havens). Of nearly 700 remaining branches, about 80 percent are offices of just nine major banks and over 200 are Citibank's alone.

International Banking on the Move: A Rationale

The reasons for the rise of international banking are straightforward—mainly to expand, protect, or stablize the expected flows of future earnings. The search for profits has naturally been a major factor in the emphasis by U.S. banks upon foreign lending, which by 1979 had reached a half-trillion dollars. Few of the major banks have been disappointed in their quest. While their domestic earnings were relatively flat between 1970 and 1976, foreign net profits quadrupled to nearly $1 billion in the same period. Indeed, foreign earnings accounted for nearly half of their total earnings in the mid-1970s, up from only 17 percent as late as 1970. The impact on earnings is especially significant for the money center banks, which derive roughly two-thirds of their income abroad. For Citibank, that share reached as high as 82 percent in 1977.[3]

Beyond this profit lure, however, specific reasons for the rise of international banking differ markedly, and include:

- Comparative advantages in skills and resource transfers
- Defense of a domestic customer base
- Portfolio diversification
- Government regulation
- Chronic United States balance-of-payments deficits.

Some banks expand internationally because they feel their distinctive competence gives them a comparative advantage in a certain area, for example, where the marginal costs of servicing a customer's accounts abroad may be low due to the bank's prior knowledge of prospective needs. Special knowledge of certain types of projects or products will also make banks effective with competitors.

Regional banks often feel they are pushed into an international position in order to defend their domestic customer base. Larger regional and money center banks have been known to attract customers via their international services. In such cases smaller banks may find that the accommodation of existing customers' emerging international needs will be good survival strategy for the deregulated environment of the 1980s.

Portfolio considerations also motivate bank expansion abroad. Diversification can take place because loan demand and default patterns differ abroad. With an internationally diversified customer base and loan portfolio, a bank's cash flows can be desynchronized, with a corresponding reduction in income variability, and improved portfolio efficiency.

Of the five factors cited, the latter two—government regulation and balance-of-payments deficits—have been the most relevant in accelerating the migration of U.S. banks. United States capital controls during the mid-1960s (interest equalization tax, foreign direct investment regulations, and the voluntary foreign credit restraint program) pushed American banks abroad, and encouraged them to fund their overseas lending from foreign branches. At the same time, banks were hampered by deposit interest rate ceilings (Regulation Q) and disintermediation problems; they countered with foreign branches offering Eurodollar time deposits and certificates of deposit at rates competitive with alternative domestic (nondeposit) media.[4] These developments, coupled with continuing OPEC problems of the 1970s, fueled a strong rise in international deposits and aggravated a festering U.S. balance-of-payments problem. Such turbulence has spawned an array of organizational approaches to international banking.

THE CHOICE OF A FOREIGN ENTRY LINK

A bank's choice of organizational approaches to international banking will largely determine the range of services it provides, as well as its flexibility in pursuing international business.[5] Foreign entry links include:

- An international department
- Shell branches and representative offices
- Edge Act and Agreement corporations
- Full service foreign branches
- Foreign equity investment

The choice is tempered largely by a bank's size, location and organizational culture.

Organizational Alternatives

A first step in tapping potential profits from international activities is establishing an international department, whereby a bank can offer the services necessary to attract customers with significant international activities. Should a local bank consider expanding international activities beyond headquarters, several choices are available. It must first decide whether to remain confined to U.S. borders, in which case it has the options of a domestic international office, an Edge Act subsidiary or an Agreement Corporation. If the bank chooses to locate abroad, it may do so via a shell branch, a representative office, a branch office (which implies a greater foreign presence), or direct investment in existing shares of a foreign bank.

Edge Act subsidiaries ("Edges") and Agreement Corporations are international banking organizations that may be located outside a bank's home state. They differ in several areas:

- Charter: Edges are chartered by Federal Reserve System, Agreements are chartered by states.
- Capitalization: Edges require $2 million.
- Scope of activity: Agreement Corporations are restricted to international banking.

Both can engage only in domestic business that is incidental to world trade. Edges have been far more popular throughout the past two decades, primarily with the majors. Less than 4 percent of all Edges in existence at the end of 1979 were associated with banks whose assets totaled less than $2 billion. Apparently such regional banks have been discouraged by the one major drawback of Edges, which is expense, particularly capitalization and staffing. It would appear that some economies of scale, such as major wholesale banking operations, are necessary to justify such an expansion.

Banks desiring quasi-banking operations abroad can resort to shell branches and representative offices, the former being the cheapest and easiest way to get access to Eurocurrency markets. Shells are banking offices located abroad that have no contact with their local foreign market, in that their actual banking activities transpire at the U.S. head office. Most are located in tax havens such as Nassau and the Cayman Islands. As opposed to Edges, these shells appeal to both money center and regional banks. The Federal Reserve Board recently has posed the possibility of onshore shells, essentially a free-trade zone for banks seeking access to the Euromarkets and presently "windowed" offshore. Where a country prohibits direct foreign bank entry, or where potential business volume is too small to warrant a major investment, representative offices may be in order. These foreign loan production offices rely on a small staff, and though they cannot provide a full range of services, they are a relatively inexpensive way to establish a local presence.

The most flexible foreign banking vehicle available to a U.S. bank is a full-service foreign branch, essentially a legal extension and integral part of the bank, not requiring separate capitalization. Competitive advantages include the halo effect of the head office name; improved environmental scanning capability (gathering foreign credit information); and greater hedging potential (quick and easy funds transfer). Its largest drawback is expense, which can be prohibitive. Additionally, both home and host country legislation restrict locational choice, as well as the nature of legitimate activity. For example, Mexico prohibits such foreign branches, with the exception of Citibank's grandfathered presence. For such reasons, regionals have chosen to avoid or limit their foreign branching. In addition, the intense competition of most foreign money centers has served as a deterrent to all but the largest (money center) banks[6] (see Table 3).

When local legislation, country risk, or expense precludes a foreign branch, banks may make a market entry by purchasing stock in a foreign bank or financial institution. The purchase can constitute majority ownership in the form of a subsidiary, or minority ownership as an affiliate. Either may be permitted to engage in activities its parent cannot, such as investment or merchant banking. Additionally, such equity participation can provide favorable tax treatment and reduce political risk. Drawbacks of such an arrangement include their limited operational flexibility with respect to foreign branches, as well as cross-cultural problems. Again, such regional bank stock purchases have been few; virtually all U.S. banks with foreign subsidiaries are located in the money centers.

TABLE 3

FOREIGN BRANCHES AND BANK SIZE
(December 31, 1979)

Total Domestic Assets (Billions)	*Number of Banks*	*Percentage of Banks with Foreign Branches*	*Number of Branches*
$ 0-1.999	4	3.4	4
0-2.999	5	12.5	5
0-4.999	11	20.4	19
0-9.999	12	92.3	66
Over $10.0	14	100.0	501
All Banks	46	0.3	595

Source: Richard Abrams, "The Role of Regional Banks in International Banking," Research Working Paper, Federal Reserve Bank of Kansas City, January, 1981, p. 11.

In the past two decades, consortium banking is also an entry link alternative. Consortia are groups of very large banks representing various nationalities, which generally pool their resources and operate as a global network. Their advantages include economies of scale and risk pooling, as well as access to large multicurrency financing. Such activity is generally best suited for the world's largest international banks.

INTERNATIONAL BANKING ACTIVITIES: SERVICES AND MEDIA

International banking activity can be broadly partitioned into payment (documentary) and financing (lending) services. Operationally, they are similarly segregated, in that the former is a labor- and paper-intensive pursuit whose profitability critically hinges on efficiencies and economics of scale. On this documentary front, banks engaged in international business can handle drafts, foreign collections, and remittances. Beyond these basic services, the extent of a bank's international commitment dictates whether it will move into such areas as foreign exchange

(FOREX), letters of credit (LCs), bankers' acceptances (BAs) or the Eurocurrency markets.

The logical evolution of international banking services typically begins with nonfunding or fee-earning services, i.e., LCs and foreign collections and payments. International payment services offered by banks in Arizona appear in Table 4. Once documentary skills have been mastered, funding services may be considered, initially including short-term acceptance financing and bank-to-bank lines. Medium-term export credit insurance might follow, using the services of the FCIA[7] and EXIM bank[8] to reinsure the credit and political risks of the transaction.

TABLE 4

SOME INTERNATIONAL PAYMENT SERVICES OF BANKS IN ARIZONA

Funds Transfer	Payments and Collection Services
	U.S. Dollar Drafts
	Air Mail Payment Orders
	Foreign Currency Drafts
Letters of Credit	Issuance
	Confirmation
	Negotiation
Foreign Exchange	Spot and Forward Trading
	Foreign Currency Funds Transfer
	Purchase and Sale of Bank Notes

Source: Developed by the authors.

Such programs are a genesis of foreign lending arrangements, transfering the principal risks, for a fee, to a government credit insurer. A bank may then move to uninsured export paper, buying the promissory note, draft, or foreign firm obligation from clients without any export insurance. International financing services offered by banks in Arizona include:

- Financing export accounts-receivable
- Export-Import (EXIM) bank loans
- Collections
- Acceptance discounting
- FCIA and EXIM-insured trade financing
- Factoring export receivables

The final and perhaps most challenging step in such an evolution is to participate in and/or syndicate project and sovereign risk credits. The political and financial risks implied in this potentially profitable aspect of international banking warrant detailed cost/benefit calculations, as well as the support and participation of executive management.

Spotlight on International Banking Media

The initial international involvement of most banks and the major thrust of local and emerging regional banks is trade finance, i.e., the issuance of LCs. Letters of credit expedite trade by allowing the bank to substitute its creditworthiness for that of the buyer. Although historically a mainstay of the majors, regional banks (assets less than $2 billion) have recently entered this market. They attribute their success to more prompt and personalized services, especially to smaller exporters and importers.

Acceptance financing has also grown rapidly in recent years. A banker's acceptance (BA) is a time draft—essentially an order to pay a specified sum of money on a specified date, drawn on and "accepted" by a bank. When a bank accepts a draft, it assumes an absolute liability for making payment to the holder of the draft at its maturity. BAs are created primarily to finance the costs associated with carrying goods in transit or during temporary storage. They are short-term (money market) instruments, typically maturing in 90 to 120 days. A bank issuing such services earns fees by buying these drafts at discounts from maturity value. BAs are attractive sources of funds to large banks whose names are familiar in the brisk secondary market for such instruments. The smaller regionals, if lacking a well-developed correspondent network, cannot be fully rate-competitive in secondary markets. Though slowly shifting from the money centers (New York, Chicago, San Francisco) these Federal Reserve districts still account for over 85 percent of a market share of roughly $55 billion.[9]

The importance of BAs in financing U.S. trade continues to increase, apparently reflecting a growing awareness of the advantages this form of credit offers to borrowers and banks as lenders. From the borrower's perspective, the effective interest rate on acceptances has been typically well below the prime lending rate, making this form of credit attractive, especially to "nonprime" borrowers. From the bank's standpoint, BAs, as a means of extending credit, meet the Federal Reserve requirements for "eligibility for rediscount" and can be readily resold in the secondary market. BAs thus permit the issuing bank to replenish its loanable funds without increasing its liabilities subject to reserve requirements.

Some banks, especially those with significant international dealings, find foreign exchange (FOREX) a profitable (and necessary) service to offer. The majors will often have dealers specializing in specific currencies, and holding an open (net long or short) position. In such cases, a bank may receive FOREX profits if the currency in which it is long (or short) appreciates (or depreciates). Many banks will avoid such risk exposure and cover their open position, thereby maintaining an advisable net neutral monetary position. One must keep in mind that the primary role of FOREX services (and a market) is to transfer purchasing power, as well as to provide credit for international trade and serve as a means to minimize exchange rate exposure. Use of this hedging facility in a more speculative vein could be financially hazardous, as Franklin National learned the hard way, by incurring foreign exchange losses of $40 million during the first half of 1974. At the time it was the twentieth largest bank with deposits of $3 billion; it was subsequently rescued from its insolvent plight by European-American Bank.

The Euromarkets

The area of international banking that probably receives the greatest attention is the Euromarket, a network of banks that issue and accept foreign currency deposits. Estimates of its gross size range from $300 billion to $1 trillion. A Eurodollar is not a currency separate from a dollar in the United States; Eurodollar deposits are all ultimately traceable to some United States bank. They differ from their domestic money counterparts only in geographic location and in terms of the interest rates that may be paid relative to home-currency interest rates. The principal factors contributing to the rapid growth of the Eurodollar market have been the United States payments deficit problem and capital controls. A major advantage of this market, for company and customer alike, is its ability to denominate accounts in a hard currency while insulating them from government seizure. Additionally, many multinationals find it convenient to keep foreign currency deposits for trade payments. The Eurocurrency market may be said to serve three valuable purposes for international business: (1) an efficient and convenient money-market device to accommodate excess corporate liquidity; (2) a major source of working capital and trade financing; and (3) a useful vehicle for arbitrage purposes.

Regional bank activity in direct Eurocurrency loans, as well as syndications, has been limited. Realizing the uncertainty of this international lending path, banks in Arizona have focused on the Mexican and Pacific Basin markets, with little exposure to less-developed countries (LDCs). Consequently, their loan loss experience has been minimal.

INTERNATIONAL BANKING PROSPECTS FOR THE 1980s

The rapid growth of U.S. international banking over the past twenty years will undoubtedly slow somewhat in the 1980s, particularly if a deregulated environment leads to equally rewarding domestic opportunities. American banks will continue to invest and expand overseas, but the patterns will likely change. For the majors, with large overseas commitments, there will be continuing effort to improve the quality of present operations abroad. Some seeking a greater economic balance may even shift their focus toward domestic operations.

The regionals are in a very different position. Though some are still smarting from ill-fated earlier ventures, many still have international ambitions. Given highly profitable domestic operations and a proportionately smaller share of the overseas market, they have the capacity to expand internationally on a more aggressive basis. It would seem that international banking may evolve from the closely held bastions of a few to the competitive free market of many. Changes in the world's political, economic and financial environment will continue to circumscribe the shape and scope of international banking. These include:

- A greater number of traders and intense competition in the international marketplace, as economic counterweights to the United States and Japan emerge.
- A continued shift of international reserves to LDCs.
- Wider currency fluctuations.
- A less important international role for the dollar.
- Foreign government restrictions and political constraints on international expansion.
- A long-awaited U.S. export expansion program.
- An enlarged access policy of the International Monetary Fund (IMF).
- Domestic free-trade zones (international banking facilities or IBFs) for banks, obviating "shells". Clearly, such developments pose both threats and opportunities to the international banking community.

As for Arizona's international banking activity, the prospects are very encouraging, the chief reason being an explosion of state exports. As of 1980, a total of 351 companies were partially or wholly engaged in imports and exports, employing 40,000 people and including many well-known electronics firms. Most often, these companies deal with one of the state's three major trading partners—Japan, Canada and Southeast Asia, with a rapidly growing importance for Mexico. In 1978 one source ranked Arizona third among states in the percentage of manufactured goods being exported.[10] In addition, considerable export activity is represented by copper and farm crops, particularly cotton. Indeed, the steadily improving business climate for Arizona exporters, coupled with its incubator economy, bodes well for its international banking efforts, which will achieve considerable importance through the 1980s.

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[1] "Investing in the United States: A Survey," *The Economist*, Oct. 25, 1980, p. 19.

[2] Christopher M. Korth, "The Evolving Role of U.S. Banks in International Finance," *The Bankers Magazine*, Jan. 1980, p. 70.

[3] Ibid, p. 71.

[4] Richard Abrams, "Regional Banks in International Banking," *Economic Review*, Federal Reserve Bank of Kansas City, November 1980, p. 4.

[5] Richard Abrams, "The Role of Regional Banks in International Banking," Research Working Paper, Federal Reserve Bank of Kansas City, January 1981, p. 13.

[6] Ibid, p. 11.

[7] The Federal Credit Insurance Corporation is a privately owned export insurance company, specializing in insuring exporters against foreign credit and country risk for periods of up to five years.

[8] The EXIM Bank generally specializes in larger and longer term transactions, especially those involving capital goods; its guarantees help minimize both foreign credit and country risk.

[9] *International Letter*, Federal Reserve Bank of Chicago, April 10, 1981.

[10] D. McGowan, "Banks' International Departments Going Global With Arizona Exports," *The Arizona Republic*, January 6, 1980, p. C1.

The Arizona Business Scene

Nogales: Mexican Trade Center

Nogales is located on the Mexican border in south central Arizona, approximately sixty miles south of Tucson. Situated on hilly terrain at the edge of the Santa Cruz River Valley, its elevation of nearly 4,000 feet results in a climate that is cooler than in the urbanized desert areas, especially in the summer. Rainfall is sparse except during July and August.

Nogales is actually two cities, one on each side of the international border. The Mexican influence is prevalent on the American side with 85 percent of the Nogales respondents to the 1980 census identifying themselves as of Spanish origin. The Arizona city, which is the county seat of Santa Cruz County, had a population of 15,683 in the 1980 census, while the Mexican-side city is estimated to have a population of over 100,000. Both cities have been growing rapidly, with the Nogales, Arizona population increasing 75 percent from 1970 to 1980.

Nogales, Arizona grew rapidly after its founding in 1882, due to the growth in mining, military, and agricultural operations in the area. The growth of the entire area was spurred by the completion of the railroad in 1882. After 1920, however, mining and military operations were greatly reduced, as was agriculture, although to a lesser degree. The population of Santa Cruz County dropped from 12,700 in 1920 to a low of 9,300 in 1950. The recent population growth has been due to a rebound in agriculture and ranching, as well as a general broadening of the economic base to include trade, services, and manufacturing. Much of the expansion in these economic sectors relates to international trade.

Nogales is important as an import/export center for Mexican trade. One major group of products traded through Nogales is garden produce grown on Mexico's west coast. The irrigated west coast areas of the Mexican states of Sonora and Sinaloa are one of the two major sources of winter vegetables for the United States (Florida is the other source). Most of these Mexican-grown vegetables pass through Nogales on the way to American markets. Fifty-eight produce firms operate in Nogales, with as many as 45,000 truckloads of produce brought into the United States yearly.

The other major group of products traded in the United States yearly includes electrical equipment, machinery, and parts. Much of this trade activity relates to the twin plants concept, whereby an American firm locates an assembly plant on the Mexican side of the border, in order to take advantage of the availability of Mexican labor and relatively low wage rates. The firm typically has a plant on the American side as well to accommodate the complete manufacture and distribution of the product to American markets. Fifty-two firms in Nogales operate on the twin plants concept, with a payroll of $31 million a year. Table 1 provides a history of the value of imports and exports passing through Nogales.

The current employment base of Nogales, Arizona is diversified, although much of the employment is related directly or indirectly to international trade. Unemployment in Nogales varies seasonally, with more workers required during the winter produce season than during the summer. In addition to U.S. citizens, a number of registered alien Mexicans work in Arizona.

TABLE 1

VALUE OF EXPORTS AND IMPORTS IN THE NOGALES IMPORT DISTRICT
(Millions of dollars)

Year	*Imports to United States*	*Exports to Mexico*
1980*p*	$916.0	$606.0
1979	836.2	507.0
1978	661.9	336.6
1977	511.5	321.9
1976	380.8	247.4
1975	314.7	241.0
1974	370.2	250.5
1973	348.1	177.5

p preliminary

Source: Department of Commerce, Foreign Trade Division.

Retail trade is the most important economic sector in Nogales, Arizona, as measured by employment. Approximately 30 percent of the local work force is employed in retail trade, about twice the statewide average. This sector is important in Nogales for two reasons: first, many residents of northern Mexico rely upon Nogales as their primary trade center; and second, Nogales receives heavy tourist business from Americans who come to shop on the Mexican side. Tourist expenditures in Santa Cruz County approximated $39 million in the 1979-1980 fiscal year, much of which occurred in Nogales. (Nogales has 77 percent of the county's population.) Other tourist attractions in the area include the historic Tubac Presidio, Tumacacori Mission, and numerous ghost towns. The natural attractions of mountains (Mt. Wrightson, north of Nogales, rises to over 9,000 feet), lakes (Pena Blanca Lake is west of Nogales and Patagonia Lake is northeast), and wildlife also draw visitors.

The service sector, which includes motels, health services, and business services, is the second largest employment sector in Nogales, with nearly 20 percent of the work force, which is approximately the same as the statewide average. Manufacturing employs approximately 10 percent of the work force, much of it tied to the twin plants concept. Wholesale trade also employs about 10 percent of the work force, twice the state average, a concentration due to the prominence of trade with Mexico, particularly in the produce industry.

Another 10 percent of the local work force is employed in government service, somewhat less than the statewide average. Much of this employment relates to county government and facilities at the international border. The other 20 percent of the work force is spread throughout the other employment sectors, with only small numbers employed in agriculture and construction. Total construction in Nogales was valued at an average of $1.1 million per year from 1974 to 1978; recent information is not yet available.

Nogales is already one of the larger Arizona towns outside the metropolitan areas, comparable in size to Casa Grande, Lake Havasu City, and Prescott. As trade between the United States and Mexico continues to expand, Nogales is likely to continue to grow as well.

A Survey of Arizona Businesss Conditions

HAROLD FEARON

While the weather was heating up and setting new records in August, the Arizona economy was cooling down and operating at lower levels than in the earlier months of the summer, according to results from the monthly business survey of the Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona. For the first time since July, 1980, the three indicators of new orders, production, and employment all were negative. However, the price indicator continues to flash encouraging signals that progress is being made in bringing inflation down to a more reasonable level.

The purchasing business survey is beginning its twentieth year of consecutive monthly reporting on the current status of the Arizona economy. Data are gathered through a questionnaire sent at the close of each month to purchasing managers throughout the state, asking them to indicate the direction of activity—higher, unchanged, or lower—on six key indicators of economic activity in the month just ended. Since these purchasing managers deal daily with the forces of supply and demand, they are able to provide timely and accurate information on current business trends, which enables economic turning points to be spotted.

Prices paid for major purchased commodities rose at a somewhat higher rate than in July, but the increase still was the second lowest of any month so far this year and well under almost all months during the past several years. Of the purchasing managers surveyed, 50 percent paid higher prices in August, 44 percent saw prices unchanged, while 6 percent said they paid lower prices in August than in July. The inflationary trend definitely has moderated since last February, although it will not ratchet down smoothly, and there will be months in which higher rates of upward price movement will be recorded. While the economy may never get to a zero inflation rate, at least it is moving in the right direction.

Delivery time on shipments from vendors continued to stretch out, consistent with the previous month, but at a fairly low rate. Longer delivery times on vendor shipments were reported by 21 percent of the purchasing managers, compared to 13 percent who received faster deliveries. The delivery-time increases have been very moderate beginning last February, and the increase rate has been gradually slowing, which is a further indication that the Arizona economy is not enjoying its normal expansion and is operating with unused capacity.

Inventory levels of purchased materials dropped again in August for the sixth consecutive month, and at a decrease rate consistent with July. Of the firms surveyed, 23 percent added to inventory, while a larger 35 percent cut stocks. As new order entries and production rates continue to decline, coupled with the current, very high interest rates, Arizona firms will further tighten their inventory policies and procedures and reduce inventory investment. While there is no indication that any

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massive inventory reduction is taking place, which would have a serious, dampening effect on the economy, Arizona firms are making concerted efforts to bring inventory in line with operating rates.

New orders received from customers dropped in August, reversing the previous month's increase. A higher new order rate was reported by 28 percent, but 37 percent said they received fewer new order bookings in August than in July. New orders from customers of Arizona firms have been coming in at only a marginal rate all through 1981, and August saw the second net decrease so far this year—June saw a net decrease also. This provides further evidence of softness in the economy.

Production declined again, for the second consecutive month, with 32 percent of the firms cutting output, compared to the 28 percent who raised production. The weakness in this indicator became evident in June in response to the flagging new order rate, and will continue until new orders begin to escalate.

Employment of Arizona firms dropped for the third month in a row; this was the fourth decline so far this year. Only 17 percent of the firms added to their work force, but a large 30 percent pared payrolls. The declines in June and July were small, but the August drop was the largest in over six years (since June, 1975), although it was almost equaled in July, 1980. This shows that, in light of the dull economic performance, Arizona firms now are beginning to take more drastic action to bring payrolls in line with declining production and new order rates.

As the third quarter ends, it is evident that the Arizona economy is feeling the effects of the sluggish economic performance being experienced nationally. While the Arizona economy has not yet deteriorated as badly as in some areas, there also are no signs that economic growth will recover dramatically in the next few months. The present slowdown is likely to continue for at least the next few months and probably through the end of the year.

The results of the July and August purchasing surveys are shown in Tables 1 and 2.

TABLE 1

JULY PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (July compared to June)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	45	47	8
Delivery time from vendors	22	65	13
Purchased materials inventory level	24	38	38
New orders received	38	33	29
Production	30	37	33
Employment	21	55	24

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

TABLE 2

AUGUST PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (August compared to July)		
Key Indicator	*Higher*	*Same*	*Lower*
Prices paid for major commodities	50	44	6
Delivery time from vendors	21	66	13
Purchased materials inventory level	23	42	35
New orders received	28	35	37
Production	28	40	32
Employment	17	53	30

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

ARIZONA SALES OF ELECTRICAL POWER

	June 1981	*June 1980*	*One Year Percentage Change*	*June 1981*	*May 1981*	*One Month Percentage Change*
Sales of Kilowatt Hours (Thousands)	3331.6	2878.9	15.7	3331.6	2656.7	25.4

	July 1981	*July 1980*	*One Year Percentage Change*	*July 1981*	*June 1981*	*One Month Percentage Change*
Sales of Kilowatt Hours (Thousands)	3695.3	3313.6	11.5	3695.3	3331.6	10.9

Doctoral Dissertation Abstract

COLLEGE OF BUSINESS ADMINISTRATION
ARIZONA STATE UNIVERSITY

Editor's Note: *Our readers are often interested in research undertaken by doctoral candidates in the College of Business Administration at Arizona State University. Therefore, we occasionally include one or two abstracts of doctoral dissertations in* Arizona Business. *Readers who wish further information on any of these subjects may examine the complete dissertations in the ASU Hayden Library.*

A MULTIPLE VARIABLE EVALUATION OF EMPLOYEE-BENEFIT REFERENCES

Peter William Stonebraker

This dissertation is aimed toward determining whether, and in what configuration, variable-benefit structures are desired by employees. This thrust is both critical and timely because benefits and compensation are an important and controllable-by-management factor of the human-resources input to productivity growth. The history and research of the employee-benefits field are reviewed and classified. That background then provides a framework for assessing benefit structures and benefit needs as potential contributors to productivity growth.

A survey instrument was developed to identify individual benefit preferences among both hourly and salaried employees. Additionally, the design was structured to test if the individual preferences were different, and which demographic variables were associated with those differences. The population considered was the approximately 4,500 full-time, permanent, and non-top-management employees of a mid-sized Southwestern industrial and utility firm. The surveyed group of 1,478 individuals yielded 485 prompt and usable responses.

The results, when measured by a total of twenty-one different chi-square tests, showed conclusively that overall employee-benefit preferences were different. When various categorizations of demographic variables and rankings of benefit options were considered together, some combinations were found to be the basis for significant differences in preference; but other combinations showed little differentiation. Longevity-related variables were shown by this research to have the greatest discriminative power; and the benefit options time off, retirement, Social Security, and dental and medical insurance were the basis of the greatest preference differences. These findings led to the conclusion that benefits could be appropriately designated as benefit-base components, optional-supplement components, and performance components.

Several design structures, unique in their application to the benefits field, are used to permit multiple iterative testing of ranked data and to convert individual ranking responses to group rankings. The findings of this research are compared with prior efforts; and, in most cases, prior research results are confirmed. This research effort strongly supports the case for variable-benefit structures, particularly in optional-supplement components, and offers suggestions for the subsequent research necessary to support this direction in the benefits field.

Peter William Stonebraker is a Major in the United States Army in the Office of the Provost Marshall. The chairman of his dissertation committee was Dr. William B. Werther, Jr., Professor of Marketing.

Arizona Construction Activity: Quarterly Report

JAY Q. BUTLER

SECOND QUARTER

The indicators on construction activity are still contradictory. While some important data seem to suggest a continued weakening of activity, other data indicate that construction is doing no worse than marking time. The main negative factor continues to be high interest rates. This ongoing trend severely affects not only the cost of owning real estate but also the desire to acquire real estate, especially new homes.

Total construction activity for Arizona during the second quarter of 1981 showed 25,654 permits valued at $75 million. This represents a 27 percent increase in number of issued permits (20,155 to 25,654) and a 48 percent increase in dollar value ($51 million to $75 million) from a year ago. Much of this increased activity occurred in Maricopa County, which had a 51 percent increase in permit activity (10,082 to 15, 277 permits) and a 69 percent increase in dollar value ($32 million to $53 million) from the second quarter of 1980. Specific areas of construction activity are reported in Table 1 and in quarterly tables at the end of this report.

Residential Sector

Maricopa County. During the second quarter, 4,603 permits for a total value of $214 million were issued for single-family dwellings. As shown in Table 1, this represents a significant increase over previous levels of activity and is fairly comparable to boom years.

Given the past levels of activity, the increase would normally be good news, especially because it occurred in the residential sector of Maricopa County. Unfortunately, the motivating force was not economic. Rather, the increase was due to a desire to obtain permits before certain cities increased their development fees. On a month-by-month basis, the 4,603 permits were recorded as shown in Table 2.

The downturn continued into July, with only 743 single-family building permits, valued at $34 million, being issued in Maricopa County. Unless economic conditions improve and interests rates decline, many of the issued permits will not be used since most builders will not construct any home unless it has been sold. Hence, the reported levels of activity must be viewed with a great deal of caution.

Figure I graphically portrays single-family sales and permit activity for the past seven quarters in Maricopa County. Generally, new home sales have been higher than permits, thus allowing builders to maintain control of their inventories. During the 1974-1975 downturn, the large supply of completed but unsold new homes created considerable problems for builders. It appears that inventory is not going to have a significant impact during the current downturn.

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TABLE 1

ARIZONA CONSTRUCTION ACTIVITY
(Current Quarter, Previous Quarter, and One Year Ago)

			COMMERCIAL							
	SINGLE FAMILY		APARTMENTS[1]		OFFICE BUILDINGS[2]		RETAIL STORES[3]		INDUSTRIAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
MARICOPA COUNTY										
2nd Quarter, 1981	4,603	213,586,214	118	125,933,675	80	39,522,246	125	30,441,995	134	28,518,419
1st Quarter, 1981	3,698	164,882,153	112	47,391,440	69	20,775,857	108	24,167,645	117	32,689,989
2nd Quarter, 1980	1,765	67,808,624	84	36,910,133	57	33,268,678	151	35,123,013	124	33,401,376
PIMA COUNTY										
2nd Quarter, 1981	625	37,269,546	15	9,323,795	37	9,253,818	54	23,089,636	3	188,800
1st Quarter, 1981	774	41,275,104	14	17,182,830	57	104,482,000	38	7,913,953	6	466,125
2nd Quarter, 1980	737	35,784,733	12	8,698,200	61	31,240,255	12	1,436,994	4	2,438,546
REST OF ARIZONA										
2nd Quarter, 1981	1,485	63,260,383	19	5,691,286	47	3,907,235	104	4,891,471	20	1,855,353
1st Quarter, 1981	1,118	45,075,084	12	10,090,117	25	1,157,443	81	4,421,244	22	1,485,562
2nd Quarter, 1980	1,301	45,336,268	6	1,873,206	47	5,244,066	87	3,908,823	20	2,786,390
ARIZONA TOTAL										
nd Quarter, 1981	6,713	314,116,143	152	140,948,756	164	52,683,299	283	58,423,102	157	30,562,572
1st Quarter, 1981	5,590	251,232,341	138	74,664,447	151	126,415,300	227	36,502,842	145	34,641,676
2nd Quarter, 1980	3,803	148,929,625	102	47,481,539	165	69,752,999	250	40,468,830	148	38,626,312

[1] Five or more housing units
[2] Office, bank, medical, and professional buildings
[3] Shopping centers and other mercantile buildings

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University.

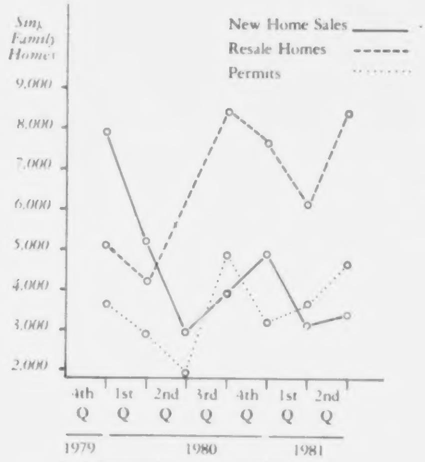
TABLE 2

SINGLE-FAMILY BUILDING PERMITS
(Second Quarter, 1981)

Month	*Number of Permits*	*Dollar Value (Millions)*
April	1,295	$ 60
May	2,120	91
June	1,188	63
Total	4,603	$214

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University.

FIGURE 1
SINGLE-FAMILY ACTIVITY*
MARICOPA COUNTY



*Includes townhouses and condominiums
Source: Marketron Data Services, Phoenix, Arizona

Single-family resale activity has demonstrated strength throughout the seven quarters. Much of this activity is due to the use of alternative (seller) financing. Some evidence indicates that the ability to use seller financing may be reaching a peak, leading to a downturn or stagnation in sales. Furthermore, there is some interest in what the impact will be on the financing market when the seller financing becomes due in the next three to seven years.

All Other Arizona Counties. The rest of Arizona reported a positive pattern of single-family activity but no significant increases. Several counties reported good levels of activity: Coconino County with 256 permits valued at $13 million; Yavapai County with 283 permits valued at $17 million; and Navajo County with 219 permits valued at $7 million. Pima County had a more predictable pattern with a 20 percent decline in issued permits (774 to 625 permits) and a 10 percent decrease in dollar value ($41 million to $37 million) from the first quarter of 1981.

While Maricopa County tends to dominate all aspects of construction activity, mobile home activity is stronger in other counties. As an example, 1,491 mobile home permits were issued in Maricopa County versus 1,589 issued in the rest of Arizona for the second quarter of 1981. Mohave, Pima, and Pinal counties are particularly important areas for mobile home activity. Historically, mobile homes have been strongest in the low income market (retired and transient). However, if the cost of more traditional housing should continue to increase, mobile homes could become more popular in Maricopa County.

Commercial Sector

Maricopa County. As shown in Table 1, the three main areas of commercial development are apartments, office buildings, and retail stores. As in new home development, many of the permits issued for apartment development were taken out to avoid increased development fees. This was especially evident in Mesa, with 34 permits valued at $54 million. Again, there is serious doubt whether all of the issued permits will be acted upon, especially since there is concern that the market is currently overbuilt.

The office market continues to be a strong area of development, especially in the Central Avenue corridor and Camelback Road areas. Except in certain areas of new home development, concern appears to be increasing that the shopping center market is also on the verge of being overbuilt. Until evidence shows economic recovery that will support new business development, shopping center development will probably continue to be relatively slow.

All Other Arizona Counties. Because of smaller bases for economic activity, commercial development tends to be more stable. Apartment development was down from the first quarter of 1981 but above that level of one year ago (see Table 1). Pima County continues to have some apartment development, with 15 permits valued at $9 million.

With the exception of Pima County, the office building sector tends to be dominated by small structures valued under $100,000. A similar pattern is shown for retail stores. Several recent studies have expressed the idea that some of the outlying areas (Yavapai and Coconino Counties) should show some strong levels of growth over the next ten years. Hence, commercial development is expected to demonstrate concurrent growth patterns.

Industrial Sector

Maricopa County. Although this sector is still a good performer, it has appeared to reach a plateau. Currently, the industrial news is mixed, with several companies announcing layoffs or moves from the area (Beckman Instruments and portions of Sperry Flight Systems), while others, especially Motorola, have announced expansion plans in the area. Although the future holds great promise for industrial expansion, there are still some concerns, especially in the supply of water and in housing costs. Although these problems are not strong deterrents, future growth may not be as vigorous or as continuous as in the past, or as is generally expected.

The Phoenix and Tempe areas continue to be popular locations for development. However, new developments should begin to expand to other areas, especially in the Mesa/Chandler areas and on the west side of Phoenix.

All Other Arizona Counties. Industrial development continues at relatively low and stable levels of activity (see Table 1). In the second quarter, Pima County reported three permits valued at $188,800 and so far in 1981 only nine permits valued at $654,925 have been issued. These levels are down significantly from 1980 when the IBM plant was being developed. Yavapai and Yuma counties reported increased industrial development.

LOOKING AHEAD

The year 1981 has been represented as a transitional market, bridging the recession market and a growth market. Because interest rates have remained higher than was commonly expected even a few months ago, the economy at midyear seems to be marking time. There is, however, growing concern about whether the economy is in transition to renewed growth or is showing signs of cumulative weakness.

The consensus forecast for the national economy calls for modest gains in the last part of 1981 with stronger economic growth through 1982—the main stimuli being the tax cuts and reduced inflation. Some pessimists, however, hold that the economy will grow only slightly through 1982 due to reduced government spending, especially at the local levels, and continuation of the restrictive monetary policy. They do not foresee economic recovery until there is broad recognition of substantially lower inflation and the impact of the recently passed tax revisions.

The differences in forecasts are due to the uncertainty of current events, particularly: (1) the impact of tax and budget cuts; (2) Federal Reserve monetary policy; (3) federal borrowing requirements; (4) the impact of increased defense spending on the budget and industrial capability, and (5) the economic viability of thrift institutions.

Concern is increasing that the tax cuts coupled with increased defense spending could offset other budget cuts. This would require increased borrowing that would lead to even higher interest rates or to no reduction in the current levels of interest rates. Although the Federal Reserve could relax its current restrictive monetary policy allowing interest rates to decline, this would ultimately increase inflation and drive interest rates back up. The Federal Reserve is expected to continue its current policy until there is a definitive decline in inflation and/or continued economic weakness—a recession.

A major obstacle to lower interest rates is continued business borrowing for financial merger activity and growing inventories, due to reduced sales activity. Furthermore, borrowing could increase even more in order to provide production capability for the expanded defense program. This activity could be detrimental to the entire real estate market. Even now, demand simply exceeds the current supply of credit. Concern is also mounting about the viability of thrift institutions under current interest rates and economic conditions. Deposit costs continue to outgain interest income from mortgages and other investments. In summary, the current economic environment does not support a rapid decline in interest rates.

Although the recently passed Economic Recovery Tax Act of 1981 provides strong tax incentives (faster depreciation) for new developments, the current economic conditions would not support a high level of development, especially if the projects were expected to obtain reasonable economic viability in the short term. Hence, development activity will not significantly increase until economic conditions improve. If consumers spend their tax cuts instead of saving the money, the proposed economic remedies would take longer to revive the economy.

Although the Arizona economy is probably one of the strongest in the country, the underlying economic conditions do not portend any sustained growth until 1982. The longer the interest rates remain high and economic factors remain uncertain, the further in the future will be the recovery. Even now some discussion intimates that a strong housing recovery will not occur until 1983. Although there are some positive notes (especially in reference to the long-term outlook for inflation), the uncertainty, limited lending liquidity, and consumer wariness call for continued stagnation and/or downturn in construction activity and the real estate market.

While this is not a promising picture, many opportunities still exist for people with vision and creativity. The revitalized real estate market will have different financing programs, consumer expectations, and organizational forms. These need to be viewed as challenges that one must now prepare to confront and satisfy. Hence, the current market should be viewed not with pessimism but with optimism of confronting a growing and changing real estate market.

Arizona New Housing Starts: Quarterly Report

SECOND QUARTER, 1981

BUILDING PERMITS ISSUED

	1 Family	*Mobile Homes*	*Duplex*	*3-4 Families*	*5 or More*	*Total Units*
APACHE CO.	34	6	—	—	—	40
Eagar	9	—	—	—	—	9
St. Johns	1	6	—	—	—	7
Springerville	5	—	—	—	—	5
Unincorporated	19	—	—	—	—	19
COCHISE CO.	72	102	—	—	3	242
Benson	1	2	—	—	—	3
Bisbee	1	—	—	—	—	1
Douglas	8	—	—	—	2	32
Huachuca City	—	—	—	—	1	44
Sierra Vista	10	35	—	—	—	45
Tombstone	1	1	—	—	—	2
Unincorporated	45	62	—	—	—	107
Willcox	6	2	—	—	—	8
COCONINO CO.	257	183	14	—	1	474
Flagstaff	89	—	14	—	—	117
Fredonia	—	5	—	—	—	5
Page	10	37	—	—	—	47
Unincorporated	156	133	—	—	1	295
Williams	2	8	—	—	—	10
GILA CO.	132	80	—	—	—	212
Globe	6	—	—	—	—	6
Hayden	—	—	—	—	—	—
Miami	—	—	—	—	—	—
Payson	42	35	—	—	—	77
Unincorporated	84	45	—	—	—	129
GRAHAM CO.	25	33	—	2	—	66
Pima	—	2	—	—	—	2
Safford	5	—	—	2	—	13
Thatcher	6	4	—	—	—	10
Unincorporated	14	27	—	—	—	41
GREENLEE CO.	7	—	—	—	—	7
Clifton	3	—	—	—	—	3
Duncan	—	—	—	—	—	—
Unincorporated	4	—	—	—	—	4
MARICOPA CO.	4,603	1,491	129	107	118	13,071
Avondale	1	—	—	16	—	65
Buckeye	3	3	—	—	—	6
Chandler	101	—	—	11	—	145
El Mirage	1	1	—	—	—	2
Gila Bend	3	—	—	—	—	3
Gilbert	43	—	1	—	—	45
Glendale	195	—	—	1	3	297
Goodyear	—	—	—	—	—	—
Guadalupe	1	—	—	—	—	1
Mesa	753	1,040	109	39	34	4,384
Paradise Valley	35	—	—	—	—	35
Peoria	64	—	3	—	—	70
Phoenix	1,847	101	9	14	53	5,591
Scottsdale	337	—	—	2	1	404
Surprise	2	3	—	—	—	5
Tempe	152	—	6	21	22	538
Tolleson	2	—	—	—	—	2
Unincorporated	1,056	343	1	3	5	1,471
Wickenburg	6	—	—	—	—	6
Youngtown	1	—	—	—	—	1
MOHAVE CO.	159	278	1	—	8	533
Kingman City	27	1	—	—	—	28
Kingman Area	21	85	—	—	—	106
Lake Havasu City	59	5	1	—	7	148
Lake Havasu Area	1	6	—	—	—	7
Mohave Valley N.	23	96	—	—	1	131
Mohave Valley S.	7	62	—	—	—	69
Dolan Springs	2	6	—	—	—	8
Sacramento Val.	9	14	—	—	—	23
Mohave General	10	3	—	—	—	13
NAVAJO CO.	219	85	—	—	—	304
Holbrook	3	—	—	—	—	3
Show Low	16	19	—	—	—	35
Snowflake	16	—	—	—	—	16
Taylor	7	8	—	—	—	15
Unincorporated	172	58	—	—	—	230
Winslow	5	—	—	—	—	5
PIMA CO.	625	354	26	18	15	1,457
Marana	1	2	1	—	—	5
Oro Valley	2	—	—	—	—	2
South Tucson	2	—	1	—	—	4
Tucson	194	178	24	18	15	846
Unincorporated	426	174	—	—	—	600
PINAL CO.	142	167	4	2	—	325
Apache Jct.	36	55	2	—	—	95
Casa Grande	26	—	—	—	—	26
Coolidge	8	5	—	—	—	13
Eloy	—	—	—	—	—	—
Florence	—	—	2	—	—	4
Kearny	1	2	—	—	—	3
Mammoth	5	—	—	—	—	5
Superior	2	—	—	—	—	2
Unincorporated	64	105	—	2	—	177
SANTA CRUZ CO.	37	1	3	—	—	44
Nogales	16	—	—	—	—	16
Patagonia	1	1	3	—	—	8
Unincorporated	20	—	—	—	—	20
YAVAPAI CO.	283	155	5	6	2	487
Chino Valley	10	20	—	—	—	30
Clarkdale	3	3	—	—	—	6
Cottonwood	5	6	—	—	—	11
Jerome	1	—	—	—	—	1
Prescott	48	8	1	4	1	86
Prescott Valley	37	22	2	1	—	66
Unincorporated	179	96	2	1	1	287
YUMA CO.	118	145	1	8	5	334
Parker	1	—	—	—	—	1
Somerton	33	2	—	—	—	35
Unincorporated	54	128	1	1	—	188
Wellton	1	—	—	—	—	1
Yuma	29	15	—	7	5	109
Total, Maricopa Co., 2nd Quarter, 1981	4,603	1,491	129	107	118	13,071
Total, Maricopa Co., 2nd Quarter, 1980	1,765	469	54	86	77	4,729
Percent Change	160	217	138	24	53	176
Total, Arizona, 2nd Quarter, 1981	6,713	3,080	183	143	152	17,596
Total, Arizona 2nd Quarter, 1980	3,445	2,084	92	111	98	8,857
Percent Change	94	47	98	28	55	98

N/R: No report.

Arizona Building Permits: Quarterly Report

SECOND QUARTER, 1981

	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
APACHE CO.	44	892,663	8	62,500	—	—	5	30,712	57	985,875
Eagar	9	343,500	1	50,000	—	—	—	—	10	393,500
St. Johns	7	N/C	—	—	—	—	2	N/C	9	N/C
Springerville	6	N/C	5	N/C	—	—	—	—	11	N/C
Unincorporated	22	549,163	2	12,500	—	—	3	30,712	27	592,375
COCHISE CO.	351	4,981,005	23	2,773,568	1	10,000	356	1,121,286	731	8,885,859
Benson	17	90,835	2	95,000	—	—	9	16,010	28	201,845
Bisbee	26	112,900	—	—	—	—	2	16,955	28	129,855
Douglas	33	752,970	4	758,544	—	—	61	159,096	98	1,670,610
Huachuca City	18	26,483	1	1,040,890	1	10,000	1	5,000	21	1,082,373
Sierra Vista	85	511,007	7	629,000	—	—	222	446,717	314	1,586,724
Tombstone	12	46,575	2	21,834	—	—	2	7,360	16	75,769
Unincorporated	143	3,215,570	3	220,000	—	—	43	449,240	189	3,884,810
Willcox	17	224,665	4	8,300	—	—	16	20,908	37	253,873
COCONINO CO.	697	16,039,717	22	2,394,527	2	160,430	133	796,324	854	19,390,998
Flagstaff	152	7,687,795	11	912,500	—	—	72	226,972	235	8,827,267
Fredonia	6	2,000	2	13,400	—	—	2	650	10	16,050
Page	68	623,864	—	—	2	160,430	10	8,200	80	792,494
Unincorporated	456	7,532,186	9	1,468,627	—	—	17	515,241	482	9,516,054
Williams	15	193,872	—	—	—	—	32	45,261	47	239,133
GILA CO.	310	4,008,980	12	430,364	—	—	121	254,665	443	4,694,009
Globe	15	190,107	—	—	—	—	17	36,105	32	226,212
Hayden	5	3,925	—	—	—	—	3	3,175	8	7,100
Miami	21	87,500	—	—	—	—	—	—	21	87,500
Payson	100	913,170	4	97,864	—	—	85	146,650	189	1,157,684
Unincorporated	169	2,814,278	8	332,500	—	—	16	68,735	193	3,215,513
GRAHAM CO.	122	1,588,903	10	231,700	—	—	14	532,050	146	2,352,653
Pima	3	60,000	1	23,000	—	—	—	—	4	83,000
Safford	41	319,140	6	172,700	—	—	10	528,250	57	1,020,090
Thatcher	22	369,420	—	—	—	—	3	1,600	25	371,020
Unincorporated	56	840,343	3	36,000	—	—	1	2,200	60	878,543
GREENLEE CO.	8	107,800	—	—	—	—	2	15,000	10	122,800
Clifton	3	N/C	—	—	—	—	1	N/C	4	N/C
Duncan	—	—	—	—	—	—	1	15,000	1	15,000
Unincorporated	5	107,800	—	—	—	—	—	—	5	107,800
MARICOPA CO.	8,376	231,257,549	832	221,813,468	134	28,518,419	5,935	50,849,803	15,277	532,439,239
Avondale	6	34,050	17	1,531,620	—	—	32	201,336	55	1,767,006
Buckeye	10	86,100	2	72,000	1	50,000	7	40,500	20	248,600
Chandler	196	3,038,576	23	4,266,170	2	155,500	424	1,673,509	645	9,133,755
El Mirage	12	46,600	—	—	—	—	4	167,900	16	214,500
Gila Bend	3	95,000	3	47,000	1	400,000	5	91,800	12	633,800
Gilbert	52	3,049,028	—	—	—	—	51	207,020	103	3,256,048
Glendale	285	7,311,697	32	4,043,940	—	—	711	3,507,705	1,028	14,863,342
Goodyear	—	—	1	80,000	4	721,200	38	215,412	43	1,016,612
Guadalupe	2	12,480	—	—	—	—	—	—	2	12,480
Mesa	2,009	35,341,272	143	71,439,500	6	771,064	1,011	7,498,489	3,169	115,050,325
Paradise Valley	85	5,050,858	—	—	—	—	104	698,475	189	5,749,333
Peoria	88	1,757,566	6	470,327	1	23,040	115	225,938	210	2,476,871
Phoenix	2,798	85,805,005	402	102,594,606	46	12,930,267	1,999	23,759,987	5,245	225,089,865
Scottsdale	438	23,013,237	24	16,185,216	2	785,148	577	4,341,092	1,041	44,324,693
Surprise	16	78,950	1	1,500	—	—	11	15,346	28	95,796
Tempe	301	10,176,800	96	16,041,900	69	9,982,200	230	2,495,100	696	38,696,000
Tolleson	18	56,701	—	—	—	—	11	139,160	29	195,861
Unincorporated	1,995	55,985,336	82	5,039,689	2	2,700,000	597	5,197,670	2,676	68,922,695
Wickenburg	6	231,440	—	—	—	—	—	—	6	231,440
Youngtown	56	86,853	—	—	—	—	8	373,364	64	460,217

Arizona Building Permits: Quarterly Report (Continued)

SECOND QUARTER, 1981	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
MOHAVE CO.	783	10,644,256	69	4,646,293	—	—	705	1,409,637	1,557	16,700,186
Kingman City	69	1,133,914	12	227,312	—	—	23	97,490	104	1,458,716
Kingman Area	177	1,963,660	5	231,264	—	—	153	159,478	335	2,354,402
Lake Havasu City	105	2,695,410	18	2,814,881	—	—	68	335,882	191	5,846,173
Lake Havasu Area	16	166,135	1	29,280	—	—	15	27,600	32	223,015
Mohave Valley N.	218	2,505,566	18	950,568	—	—	260	376,542	496	3,832,676
Mohave Valley S.	117	1,184,485	11	308,796	—	—	108	161,124	236	1,654,405
Dolan Springs	18	110,448	1	27,648	—	—	20	9,662	39	147,758
Sacramento Val.	42	430,484	—	—	—	—	44	53,357	86	483,841
Mohave General	21	454,154	3	56,544	—	—	14	188,502	38	699,200
NAVAJO CO.	475	8,924,090	11	1,195,053	—	—	51	226,382	537	10,345,525
Holbrook	8	139,364	2	135,000	—	—	—	—	10	274,364
Show Low	54	764,513	2	179,400	—	—	33	160,808	89	1,104,721
Snowflake	16	N/C	—	—	—	—	1	N/C	17	N/C
Taylor	16	354,000	—	—	—	—	3	3,500	19	357,500
Unincorporated	356	7,370,063	4	836,153	—	—	9	40,824	369	8,247,040
Winslow	25	296,150	3	44,500	—	—	5	21,250	33	361,900
PIMA CO.	1,843	43,908,928	127	45,853,072	3	188,800	1,607	12,667,553	3,580	102,618,353
Marana	5	N/C	1	N/C	—	—	—	—	6	N/C
Oro Valley	3	195,500	—	—	—	—	2	5,000	5	200,500
South Tucson	32	258,386	—	—	1	3,000	7	2,400	40	263,786
Tucson	884	12,602,359	80	26,083,072	2	185,800	825	8,440,088	1,791	47,311,319
Unincorporated	919	30,852,683	46	19,770,000	—	—	773	4,220,065	1,738	54,842,748
PINAL CO.	443	6,057,157	33	1,684,474	5	183,468	246	3,984,545	727	11,909,644
Apache Junction	108	2,123,613	6	988,266	1	76,608	130	3,323,216	245	6,511,703
Casa Grande	57	1,345,902	13	439,019	4	106,860	25	296,581	99	2,188,362
Coolidge	43	233,061	—	—	—	—	6	22,400	49	255,461
Eloy	13	25,607	3	1,489	—	—	2	11,600	18	38,696
Florence	7	59,250	—	—	—	—	4	3,514	11	62,764
Kearny	5	42,500	—	—	—	—	1	4,000	6	46,500
Mammoth	7	130,350	—	—	—	—	—	—	7	130,350
Superior	11	51,800	—	—	—	—	6	6,300	17	58,100
Unincorporated	192	2,045,074	11	255,700	—	—	72	316,934	275	2,617,708
SANTA CRUZ CO.	68	1,640,955	2	22,000	2	225,000	35	886,334	107	2,774,289
Nogales	39	596,175	—	—	—	—	27	840,020	66	1,436,195
Patagonia	7	68,100	1	15,000	—	—	3	8,500	11	91,600
Unincorporated	22	976,680	1	7,000	2	225,000	5	37,814	30	1,246,494
YAVAPAI CO.	715	21,169,671	53	3,423,386	5	422,343	256	993,760	1,029	26,009,160
Chino Valley	52	617,483	4	121,000	1	1,343	15	7,352	72	747,178
Clarkdale	12	185,229	1	34,200	—	—	1	350	14	219,779
Cottonwood	54	300,810	7	205,000	—	—	13	114,473	74	620,283
Jerome	5	27,800	—	—	—	—	5	5,700	10	33,500
Prescott	129	2,779,937	21	1,680,596	—	—	129	329,251	279	4,789,784
Prescott Valley	81	1,405,962	6	223,960	1	16,000	—	—	88	1,645,922
Unincorporated	382	15,852,450	14	1,158,630	3	405,000	93	536,634	492	17,952,714
YUMA CO.	469	9,160,712	25	2,477,769	5	854,112	100	1,316,470	599	13,809,063
Parker	5	47,160	2	45,000	2	45,000	3	14,200	12	151,360
Somerton	40	1,751,646	1	8,400	—	—	1	1,000	42	1,761,046
Unincorporated	277	5,257,923	4	245,380	2	804,870	39	755,230	322	7,063,403
Wellton	2	34,200	1	5,000	—	—	—	—	3	39,200
Yuma	145	2,069,783	17	2,173,989	1	4,242	57	546,040	220	4,794,054
Total, Maricopa Co. 2nd Quarter, 1981	8,376	231,257,549	832	221,813,468	134	28,518,419	5,935	50,849,803	15,277	532,439,239
Total Maricopa Co. 2nd Quarter, 1980	4,518	79,844,790	738	134,559,233	128	35,247,376	4,698	65,394,824	10,082	315,046,223
Percent Change	85	189	12	64	4	-19	26	-22	51	69
Total Arizona 2nd Quarter, 1981	14,704	360,382,386	1,227	287,008,174	157	30,562,572	9,566	75,084,521	25,654	753,037,653
Total Arizona 2nd Quarter, 1980	11,108	183,386,829	1,128	191,132,399	153	40,560,612	7,766	91,945,980	20,155	507,025,820
Percent Change	32	96	8	50	2	-24	23	-18	27	48

*Includes mobile homes N/C: not collected.

NOTICE

Starting with the next issue of *Arizona Business*, Arizona New Housing Starts and Arizona Building Permits will be published on a quarterly basis only. Monthly data may be obtained upon special request by writing to:

Building Permit Data
Bureau of Business and Economic Research
College of Business Administration
Arizona State University
Tempe, AZ 85287

Telephone requests will also be accepted. Call Lani Collins or Ann Beard, (602) 965-3961.

Please indicate whether you wish to receive regular monthly reports or the data for only one month.

Arizona New Housing Starts: Monthly Report

JUNE, 1981

BUILDING PERMITS ISSUED

	1 Family	*Mobile Homes*	*Duplex*	*3-4 Families*	*5 or More*	*Total Units*
APACHE CO.	5	1	—	—	—	6
Eagar	—	—	—	—	—	—
St. Johns	—	1	—	—	—	1
Springerville	—	—	—	—	—	—
Unincorporated	5	—	—	—	—	5
COCHISE CO.	26	32	—	—	—	58
Benson	1	—	—	—	—	1
Bisbee	1	—	—	—	—	1
Douglas	3	—	—	—	—	3
Huachuca City	—	—	—	—	—	—
Sierra Vista	5	3	—	—	—	8
Tombstone	—	—	—	—	—	—
Unincorporated	14	27	—	—	—	41
Wilcox	2	2	—	—	—	4
COCONINO CO.	96	71	1	—	—	169
Flagstaff	34	—	1	—	—	36
Fredonia	—	2	—	—	—	2
Page	3	17	—	—	—	20
Unincorporated	59	47	—	—	—	106
Williams	—	5	—	—	—	5
GILA CO.	55	28	—	—	—	83
Globe	1	—	—	—	—	1
Hayden	—	—	—	—	—	—
Miami	—	—	—	—	—	—
Payson	18	10	—	—	—	28
Unincorporated	36	18	—	—	—	54
GRAHAM CO.	5	9	—	—	—	14
Pima	—	—	—	—	—	—
Safford	1	—	—	—	—	1
Thatcher	2	2	—	—	—	4
Unincorporated	2	7	—	—	—	9
GREENLEE CO.	3	—	—	—	—	3
Clifton	2	—	—	—	—	2
Duncan	—	—	—	—	—	—
Unincorporated	1	—	—	—	—	1
MARICOPA CO.	1,188	1,217	106	52	48	5,031
Avondale	—	—	—	6	—	24
Buckeye	3	2	—	—	—	5
Chandler	11	—	—	—	—	11
El Mirage	—	—	—	—	—	—
Gila Bend	3	—	—	—	—	3
Gilbert	10	—	—	—	—	10
Glendale	54	—	—	—	3	152
Goodyear	—	—	—	—	—	—
Guadalupe	—	—	—	—	—	—
Mesa	451	1,040	102	29	26	3,697
Paradise Valley	10	—	—	—	—	10
Peoria	19	—	—	—	—	19
Phoenix	159	54	2	4	3	267
Scottsdale	66	—	—	2	—	73
Surprise	—	—	—	—	—	—
Tempe	74	—	2	10	11	248
Tolleson	—	—	—	—	—	—
Unincorporated	326	121	—	1	5	510
Wickenburg	2	—	—	—	—	2
Youngtown	—	—	—	—	—	—

N/R: No report.

BUILDING PERMITS ISSUED

	1 Family	*Mobile Homes*	*Duplex*	*3-4 Families*	*5 or More*	*Total Units*
MOHAVE CO.	43	90	—	—	2	170
Kingman City	8	—	—	—	—	8
Kingman Area	3	30	—	—	—	33
Lake Havasu City	13	2	—	—	2	52
Lake Havasu Area	1	—	—	—	—	1
Mohave Valley N.	7	31	—	—	—	38
Mohave Valley S.	3	17	—	—	—	20
Dolan Springs	—	3	—	—	—	3
Sacramento Val.	3	5	—	—	—	8
Mohave General	5	2	—	—	—	7
NAVAJO CO.	69	31	—	—	—	100
Holbrook	2	—	—	—	—	2
Show Low	1	8	—	—	—	9
Snowflake	3	—	—	—	—	3
Taylor	1	3	—	—	—	4
Unincorporated	60	20	—	—	—	80
Winslow	2	—	—	—	—	2
PIMA CO.	243	126	9	3	10	674
Marana	1	—	—	—	—	1
Oro Valley	—	—	—	—	—	—
South Tucson	1	—	—	—	—	1
Tucson	71	52	9	3	10	428
Unincorporated	170	74	—	—	—	244
PINAL CO.	39	56	2	—	—	99
Apache Jct.	9	15	—	—	—	24
Casa Grande	5	—	—	—	—	5
Coolidge	6	—	—	—	—	6
Eloy	—	—	—	—	—	—
Florence	—	—	2	—	—	4
Kearny	—	1	—	—	—	1
Mammoth	1	—	—	—	—	1
Superior	1	—	—	—	—	1
Unincorporated	17	40	—	—	—	57
SANTA CRUZ CO.	8	—	2	—	—	12
Nogales	4	—	—	—	—	4
Patagonia	1	—	2	—	—	5
Unincorporated	3	—	—	—	—	3
YAVAPAI CO.	94	49	1	—	—	145
Chino Valley	5	4	—	—	—	9
Clarkdale	—	2	—	—	—	2
Cottonwood	3	3	—	—	—	6
Jerome	1	—	—	—	—	1
Prescott	18	5	—	—	—	23
Prescott Valley	15	11	1	—	—	28
Unincorporated	52	24	—	—	—	76
YUMA CO.	37	52	1	1	—	95
Parker	—	—	—	—	—	—
Somerton	15	2	—	—	—	17
Unincorporated	6	43	1	1	—	55
Wellton	1	—	—	—	—	1
Yuma	15	7	—	—	—	22
Total. Maricopa Co., June, 1981	1,188	1,217	106	52	48	5,031
Total. Maricopa Co., June, 1980	909	160	31	25	54	2,189
Percent Change	30	660	241	107	-11	129
Total. Arizona, June,1981	1,911	1,762	122	56	60	6,659
Total. Arizona, June, 1980	1,694	707	38	33	59	3,944
Percent Change	12	149	221	69	1	68

Arizona Building Permits: Monthly Report

JUNE, 1981

	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
APACHE CO.	8	154,100	3	2,500	—	—	2	3,212	13	159,812
Eagar	—	—	—	—	—	—	—	—	—	—
St. Johns	1	N/C	—	—	—	—	1	N/C	2	N/C
Springerville	1	N/C	2	N/C	—	—	—	—	3	N/C
Unincorporated	6	154,100	1	2,500	—	—	1	3,212	8	159,812
COCHISE CO.	99	1,701,569	9	597,544	—	—	136	547,472	244	2,846,585
Benson	2	44,500	1	12,000	—	—	4	12,135	7	68,635
Bisbee	7	71,300	—	—	—	—	—	—	7	71,300
Douglas	11	248,463	2	58,344	—	—	21	67,611	34	374,418
Huachuca City	3	11,500	—	—	—	—	1	5,000	4	16,500
Sierra Vista	18	258,606	2	340,000	—	—	79	194,904	99	793,510
Tombstone	1	500	—	—	—	—	—	—	1	500
Unincorporated	50	985,400	2	180,000	—	—	23	256,422	75	1,421,822
Willcox	7	81,300	2	7,200	—	—	8	11,400	17	99,900
COCONINO CO.	256	5,287,071	7	1,539,722	1	72,930	51	474,303	315	7,374,026
Flagstaff	50	2,167,583	3	549,000	—	—	25	52,954	78	2,769,537
Fredonia	2	N/C	1	12,000	—	—	—	—	3	12,000
Page	23	208,031	—	—	1	72,930	3	200	27	281,161
Unincorporated	175	2,847,473	3	978,722	—	—	6	411,129	184	4,237,324
Williams	6	63,984	—	—	—	—	17	10,020	23	74,004
GILA CO.	111	1,436,846	5	224,500	—	—	37	111,755	153	1,773,101
Globe	4	42,707	—	—	—	—	5	7,800	9	50,507
Hayden	1	1,800	—	—	—	—	—	—	1	1,800
Miami	10	45,800	—	—	—	—	—	—	10	45,800
Payson	32	350,351	—	—	—	—	26	79,555	58	429,906
Unincorporated	64	996,188	5	224,500	—	—	6	24,400	75	1,245,088
GRAHAM CO.	45	357,193	5	38,400	—	—	4	475,600	54	871,193
Pima	—	—	—	—	—	—	—	—	—	—
Safford	19	125,900	3	3,400	—	—	3	475,100	25	604,400
Thatcher	7	97,000	—	—	—	—	1	500	8	97,500
Unincorporated	19	134,293	2	35,000	—	—	—	—	21	169,293
GREENLEE CO.	4	21,800	—	—	—	—	—	—	4	21,800
Clifton	2	N/C	—	—	—	—	—	—	2	N/C
Duncan	—	—	—	—	—	—	—	—	—	—
Unincorporated	2	21,800	—	—	—	—	—	—	2	21,800
MARICOPA CO.	3,128	71,606,582	379	90,607,983	43	11,653,962	1,976	19,140,351	5,526	193,008,878
Avondale	—	—	7	901,620	—	—	20	62,050	27	963,670
Buckeye	8	85,300	2	72,000	—	—	3	28,728	13	186,028
Chandler	45	478,333	4	157,500	—	—	133	537,148	182	1,172,981
El Mirage	2	2,500	—	—	—	—	1	42,000	3	44,500
Gila Bend	3	95,000	—	—	—	—	—	—	3	95,000
Gilbert	14	1,473,988	—	—	—	—	29	98,843	43	1,572,831
Glendale	71	2,118,834	12	2,455,400	—	—	217	1,674,599	300	6,248,833
Goodyear	—	—	—	—	—	—	8	119,119	8	119,119
Guadalupe	—	—	—	—	—	—	—	—	—	—
Mesa	1,624	22,460,133	79	58,462,621	4	383,000	355	3,837,011	2,062	85,142,765
Paradise Valley	30	1,558,950	—	—	—	—	39	214,222	69	1,773,172
Peoria	25	575,952	4	250,907	1	23,040	35	73,335	65	923,234
Phoenix	472	10,604,523	174	9,938,301	12	5,767,974	654	9,395,658	1,312	35,706,456
Scottsdale	88	5,397,524	9	8,689,545	2	785,148	179	1,027,990	278	15,900,207
Surprise	3	14,450	—	—	—	—	3	1,460	6	15,910
Tempe	125	5,005,000	37	6,328,300	23	3,194,800	64	602,100	249	15,130,200
Tolleson	8	7,356	—	—	—	—	2	9,597	10	16,953
Unincorporated	587	21,664,431	51	3,351,789	1	1,500,000	228	1,273,127	867	27,789,347
Wickenburg	2	48,640	—	—	—	—	—	—	2	48,640
Youngtown	21	15,668	—	—	—	—	6	143,364	27	159,032

JUNE, 1981

Arizona Building Permits: Monthly Report (Continued)

	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
MOHAVE CO	236	3,115,682	20	1,487,638	—	—	223	380,407	479	4,983,727
Kingman City	21	351,921	6	90,006	—	—	7	5900	34	447,827
Kingman Area	54	565,418	1	27,648	—	—	53	62,546	108	655,612
Lake Havasu City	27	582,088	6	1,196,004	—	—	23	112,340	56	1,890,432
Lake Havasu Area	6	69,632	—	—	—	—	7	5,520	13	75,152
Mohave Valley N	67	795,532	5	134,688	—	—	86	112,909	158	1,043,129
Mohave Valley S	31	344,079	1	24,172	—	—	21	29,556	53	397,807
Dolan Springs	6	34,412	—	—	—	—	5	4,304	11	38,716
Sacramento Val	14	146,118	—	—	—	—	14	23,660	28	169,778
Mohave General	10	226,482	1	15,120	—	—	7	23,672	18	265,274
NAVAJO CO	185	2,981,870	5	824,844	—	—	24	8,600	214	3,815,314
Holbrook	6	91,464	—	—	—	—	—	—	6	91,464
Show Low	25	71,910	—	—	—	—	19	—	44	71,910
Snowflake	3	N/C	—	—	—	—	1	N/C	4	N/C
Taylor	4	50,000	—	—	—	—	—	—	4	50,000
Unincorporated	141	2,662,396	2	780,344	—	—	2	8,600	145	3,451,340
Winslow	6	106,100	3	44,500	—	—	2	—	11	150,600
PIMA CO	662	18,545,279	54	25,619,445	1	3,000	548	5,346,800	1,265	49,514,524
Marana	1	N/C	—	—	—	—	—	—	1	N/C
Oro Valley	—	—	—	—	—	—	2	5,000	2	5,000
South Tucson	5	37,060	—	—	1	3,000	5	1,600	11	41,660
Tucson	296	4,406,236	29	11,914,445	—	—	306	3,739,895	631	20,060,576
Unincorporated	360	14,101,983	25	13,705,000	—	—	235	1,600,305	620	29,407,288
PINAL CO	138	1,405,029	9	1,166,521	2	123,696	95	3,372,206	244	6,067,452
Apache Junction	29	475,556	4	833,266	1	76,608	39	3,043,813	73	4,429,243
Casa Grande	12	293,248	2	331,766	1	47,088	13	118,433	28	790,535
Coolidge	14	86,661	—	—	—	—	—	—	14	86,661
Eloy	4	4,700	3	1,489	—	—	—	—	7	6,189
Florence	5	58,500	—	—	—	—	2	1,439	7	59,939
Kearny	1	N/C	—	—	—	—	1	4,000	2	4,000
Mammoth	2	15,050	—	—	—	—	—	—	2	15,050
Superior	4	9,900	—	—	—	—	—	—	4	9,900
Unincorporated	67	461,414	—	—	—	—	40	204,521	107	665,935
SANTA CRUZ CO	21	435,675	2	22,000	—	—	7	457,870	30	915,545
Nogales	13	168,075	—	—	—	—	5	450,870	18	618,945
Patagonia	4	45,600	1	15,000	—	—	1	4,000	6	64,600
Unincorporated	4	222,000	1	7,000	—	—	1	3,000	6	232,000
YAVAPAI CO	240	5,954,069	19	688,420	3	56,343	101	602,039	363	7,300,871
Chino Valley	17	254,580	—	—	1	1,343	6	2,279	24	258,202
Clarkdale	8	22,169	—	—	—	—	—	—	8	22,169
Cottonwood	18	130,897	1	24,000	—	—	8	78,968	27	233,865
Jerome	3	27,200	—	—	—	—	1	1,200	4	28,400
Prescott	47	1,187,403	9	185,190	—	—	50	130,590	106	1,503,183
Prescott Valley	40	637,972	2	45,800	—	—	—	—	42	683,772
Unincorporated	107	3,693,848	7	433,430	2	55,000	36	389,002	152	4,571,280
YUMA CO	150	3,082,135	3	432,171	—	—	30	343,266	183	3,857,572
Parker	1	10,000	—	—	—	—	1	10,000	2	20,000
Somerton	18	807,417	—	—	—	—	1	1,000	19	808,417
Unincorporated	72	1,109,748	1	71,040	—	—	12	220,619	85	1,401,407
Wellton	1	32,200	—	—	—	—	—	—	1	32,200
Yuma	58	1,122,770	2	361,131	—	—	16	111,647	76	1,595,548
Total Maricopa Co. June, 1981	3,128	71,606,582	379	90,607,983	43	11,653,962	1,976	19,140,351	5,526	193,008,878
Total Maricopa Co. June, 1980	1,894	37,377,794	297	46,149,846	55	9,412,782	1,151	36,300,766	3,757	129,241,188
Percent Change	65	91	27	96	-21	23	71	-47	47	49
Total Arizona, June, 1981	5,283	116,084,900	520	123,251,688	50	11,909,931	3,234	31,263,881	9,087	282,510,400
Total Arizona, June, 1980	4,051	79,497,501	385	79,671,776	64	11,884,328	2,678	46,751,367	7,178	217,624,572
Percent Change	30	46	35	54	-21	—	20	-33	26	29

*Includes mobile homes

N/C Not collected

Arizona Building Permits: Monthly Report

	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
APACHE CO.	20	517,150	2	34,000	—	—	3	335,000	25	886,150
Eagar	4	140,000	2	34,000	—	—	—	—	6	174,000
St. Johns	1	—	—	—	—	—	1	—	2	—
Springerville	3	—	—	—	—	—	1	—	4	—
Unincorporated	12	377,150	—	—	—	—	1	335,000	13	712,150
COCHISE CO.	93	1,280,384	7	1,171,700	1	23,256	118	842,658	219	3,317,998
Benson	7	69,100	—	—	—	—	6	4,149	13	73,249
Bisbee	10	15,000	—	—	—	—	2	485,000	12	500,000
Douglas	13	190,435	—	—	—	—	22	40,970	35	231,405
Huachuca City	3	3,500	—	—	—	—	—	—	3	3,500
Sierra Vista	18	108,411	2	413,000	—	—	70	122,114	90	643,525
Tombstone	3	76,000	1	7,500	1	23,256	3	1,095	8	107,851
Unincorporated	35	741,738	4	751,200	—	—	13	188,330	52	1,681,268
Willcox	4	76,200	—	—	—	—	2	1,000	6	77,200
COCONINO CO.	215	3,967,894	15	1,101,053	—	—	56	60,954	286	5,129,901
Flagstaff	34	1,497,645	7	378,516	—	—	38	53,454	79	1,929,615
Fredonia	1	1,000	—	—	—	—	1	300	2	1,300
Page	25	68,747	2	216,285	—	—	6	—	33	285,032
Unincorporated	150	2,366,851	6	506,252	—	—	5	3,500	161	2,876,603
Williams	5	33,651	—	—	—	—	6	3,700	11	37,351
GILA CO.	77	1,447,533	5	139,900	1	—	39	123,408	122	1,710,841
Globe	2	48,095	2	39,900	—	—	4	9,400	8	97,395
Hayden	—	—	—	—	—	—	—	—	—	—
Miami	1	1600	—	—	—	—	2	1,700	3	3,300
Payson	30	431,090	2	—	1	—	28	23,808	61	454,898
Unincorporated	44	966,748	1	100,000	—	—	5	88,500	50	1,155,248
GRAHAM CO.	42	304,916	5	38,050	1	15,000	5	37,690	53	395,656
Pima	—	—	—	—	—	—	—	—	—	—
Safford	11	61,600	4	36,050	—	—	5	37,690	20	135,340
Thatcher	11	73,950	—	—	—	—	—	—	11	73,950
Unincorporated	20	169,366	1	2,000	1	15,000	—	—	22	186,366
GREENLEE CO.	5	100,000	—	—	—	—	1	800	6	100,800
Clifton	2	—	—	—	—	—	—	—	2	—
Duncan	—	—	—	—	—	—	—	—	—	—
Unincorporated	3	100,000	—	—	—	—	1	800	4	100,800
MARICOPA CO.	1,494	37,251,646	297	49,585,980	58	17,728,514	1,545	20,025,356	3,394	124,591,496
Avondale	1	25,920	—	—	—	—	12	31,119	13	57,039
Buckeye	2	1,000	—	—	—	—	11	45,400	13	46,400
Chandler	68	433,565	8	987,580	1	273,400	100	1,473,890	177	3,168,435
El Mirage	—	—	—	—	—	—	—	—	—	—
Gila Bend	—	—	—	—	—	—	—	—	—	—
Gilbert	13	316,320	2	180,000	—	—	8	24,850	23	521,170
Glendale	104	3,168,594	10	381,300	3	601,000	188	911,437	305	5,062,331
Goodyear	—	—	—	—	—	—	3	10,550	3	10,550
Guadalupe	4	8,980	—	—	—	—	—	—	4	8,980
Mesa	58	1,545,663	1	200,000	1	50,000	299	6,403,470	359	8,199,133
Paradise Valley	19	907,080	4	244,000	—	—	17	160,060	40	1,311,140
Peoria	27	567,477	1	29,500	1	830,750	24	55,027	53	1,482,754
Phoenix	425	8,752,805	200	41,776,503	23	8,765,864	489	8,351,842	1,137	67,647,014
Scottsdale	129	6,007,835	29	2,566,897	—	—	151	918,867	309	9,493,599
Surprise	4	6,450	—	—	—	—	5	41,010	9	47,460
Tempe	209	7,420,000	28	1,157,000	28	7,172,500	54	646,500	319	16,396,000
Tolleson	3	45,150	2	825,000	—	—	3	1,400	8	871,550
Unincorporated	411	8,031,921	12	1,238,200	1	35,000	178	933,534	602	10,238,655
Wickenburg	—	—	—	—	—	—	1	10,000	1	10,000
Youngtown	17	12,886	—	—	—	—	2	6,400	19	19,286

JULY, 1981

Arizona Building Permits: Monthly Report (Continued)

	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
MOHAVE CO.	218	2,997,731	17	4,291,801	—	—	174	501,998	409	7,791,530
Kingman City	20	408,822	3	54,700	—	—	8	13,570	31	477,092
Kingman Area	52	540,191	2	105,600	—	—	33	29,946	87	675,737
Lake Havasu City	22	504,599	11	4,069,293	—	—	20	272,096	53	4,845,988
Lake Havasu Area	2	40,320	—	—	—	—	5	5,992	7	46,312
Mohave Valley N.	62	887,567	1	62,208	—	—	74	128,184	137	1,077,959
Mohave Valley S.	33	366,476	—	—	—	—	19	30,758	52	397,234
Dolan Springs	12	94,975	—	—	—	—	7	6,522	19	101,497
Sacramento Val.	9	61,404	—	—	—	—	7	10,130	16	71,534
Mohave General	6	93,377	—	—	—	—	1	4,800	7	98,177
NAVAJO CO.	148	2,456,617	2	27,144	6	17,500	7	21,568	163	2,522,829
Holbrook	1	1,500	—	—	—	—	—	—	1	1,500
Show Low	22	140,800	—	—	6	17,500	—	—	28	158,300
Snowflake	4	—	—	—	—	—	—	—	4	—
Taylor	6	12,200	—	—	—	—	—	—	6	12,200
Unincorporated	107	2,161,017	2	27,144	—	—	3	6,468	112	2,194,629
Winslow	8	141,100	—	—	—	—	4	15,100	12	156,200
PIMA CO.	776	17,715,243	63	61,555,468	1	10,000	574	3,888,602	1,414	83,169,313
Marana	—	—	—	—	—	—	—	—	—	—
Oro Valley	4	230,000	—	—	--	—	—	—	4	230,000
South Tucson	8	12,250	—	—	—	—	8	13,500	16	25,750
Tucson	336	6,769,983	27	7,801,038	—	—	221	1,795,949	584	16,366,970
Unincorporated	428	10,703,010	36	53,754,430	1	10,000	345	2,079,153	810	66,546,593
PINAL CO.	139	3,244,405	13	1,574,068	2	290,700	66	353,559	220	5,462,732
Apache Junction	37	972,437	4	487,192	2	290,700	29	60,832	72	1,811,161
Casa Grande	41	1,469,318	7	1,011,876	—	—	10	115,915	58	2,597,109
Coolidge	8	18,500	—	—	—	—	—	—	8	18,500
Eloy	1	1,110	—	—	—	—	1	600	2	1,710
Florence	1	29,500	—	—	—	—	1	500	2	30,000
Kearny	1	8,000	—	—	—	—	—	—	1	8,000
Mammoth	1	—	—	—	—	—	—	—	1	—
Superior	1	2,000	1	10,000	—	—	5	38,000	7	50,000
Unincorporated	48	743,540	1	65,000	—	—	20	137,712	69	946,252
SANTA CRUZ CO.	12	729,210	—	—	1	90,000	4	124,000	17	943,210
Nogales	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	2	48,000	—	—	—	—	1	9,000	3	57,000
Unincorporated	10	681,210	—	—	1	90,000	3	115,000	14	886,210
YAVAPAI CO.	308	6,389,597	11	338,217	2	89,400	76	601,241	397	7,418,455
Chino Valley	20	312,100	—	—	—	—	6	125,350	26	437,450
Clarkdale	5	19,980	—	—	—	—	2	1,095	7	21,075
Cottonwood	11	172,565	—	—	—	—	5	70,453	16	243,018
Jerome	2	5,500	—	—	—	—	—	—	2	5,500
Prescott	57	830,246	4	107,057	1	71,400	26	39,050	88	1,047,753
Prescott Valley	48	756,310	2	69,160	—	—	—	—	50	825,470
Unincorporated	165	4,292,896	5	162,000	1	18,000	37	365,293	208	4,838,189
YUMA CO.	98	1,295,101	11	469,876	—	—	30	285,066	139	2,050,043
Parker	4	57,800	—	—	—	—	1	1,000	5	58,800
Somerton	6	128,803	—	—	—	—	2	11,000	8	139,803
Unincorporated	54	732,350	4	190,580	—	—	10	160,705	68	1,083,635
Wellton	—	—	—	—	—	—	—	—	—	—
Yuma	34	376,148	7	279,296	—	—	17	112,361	58	767,805
Total Maricopa Co. July, 1981	1,494	37,251,646	297	49,585,980	58	17,728,514	1,545	20,025,356	3,394	124,591,496
Total Maricopa Co. July, 1980	2,493	67,834,986	143	28,868,185	43	16,153,267	1,994	27,408,182	4,673	140,264,620
Percent Change	-40	-45	107	71	34	9	-22	-26	-27	-11
Total Arizona, July, 1981	3,645	79,697,427	448	120,327,257	73	18,264,370	2,698	27,201,900	6,864	245,490,954
Total Arizona, July, 1980	4,821	116,951,308	272	46,283,075	50	16,211,267	3,191	61,249,957	8,334	245,383,914
Percent Change	-24	-31	64	159	45	12	-15	-55	-17	—

N/R: No Report

*Includes Mobile Homes

Arizona New Housing Starts: Monthly Report

JULY, 1981

BUILDING PERMITS ISSUED

	1 Family	*Mobile Homes*	*Duplex*	*3-4 Families*	*5 or More*	*Total Units*
APACHE CO.	18	—	1	—	—	20
Eagar	3	—	1	—	—	5
St. Johns	1	—	—	—	—	1
Springerville	3	—	—	—	—	3
Unincorporated	11	—	—	—	—	11
COCHISE CO.	19	29	—	—	—	48
Benson	1	2	—	—	—	3
Bisbee	—	—	—	—	—	—
Douglas	2	—	—	—	—	2
Huachuca City	—	—	—	—	—	—
Sierra Vista	2	6	—	—	—	8
Tombstone	2	—	—	—	—	2
Unincorporated	10	21	—	—	—	31
Willcox	2	—	—	—	—	2
COCONINO CO.	63	59	—	1	—	125
Flagstaff	19	—	—	1	—	22
Fredonia	—	—	—	—	—	—
Page	2	14	—	—	—	16
Unincorporated	42	44	—	—	—	86
Williams	—	1	—	—	—	1
GILA CO.	35	14	—	—	—	49
Globe	1	—	—	—	—	1
Hayden	—	—	—	—	—	—
Miami	—	—	—	—	—	—
Payson	17	6	—	—	—	23
Unincorporated	17	8	—	—	—	25
GRAHAM CO.	4	11	—	—	—	15
Pima	—	—	—	—	—	—
Safford	1	2	—	—	—	3
Thatcher	—	2	—	—	—	2
Unincorporated	3	7	—	—	—	10
GREENLEE CO.	5	—	—	—	—	5
Clifton	2	—	—	—	—	2
Duncan	—	—	—	—	—	—
Unincorporated	3	—	—	—	—	3
MARICOPA CO.	743	138	2	10	12	1,071
Avondale	1	—	—	—	—	1
Buckeye	—	1	—	—	—	1
Chandler	43	—	—	—	—	43
El Mirage	—	—	—	—	—	—
Gila Bend	—	—	—	—	—	—
Gilbert	6	—	—	2	—	14
Glendale	85	—	—	—	—	85
Goodyear	—	—	—	—	—	—
Guadalupe	—	—	—	—	—	—
Mesa	32	—	—	—	—	32
Paradise Valley	5	—	—	—	—	5
Peoria	19	—	—	—	—	19
Phoenix	148	28	1	3	7	296
Scottsdale	90	—	—	—	—	90
Surprise	1	—	—	—	—	1
Tempe	157	—	1	5	—	179
Tolleson	2	—	—	—	2	27
Unincorporated	154	109	—	—	3	278
Wickenburg	—	—	—	—	—	—
Youngtown	—	—	—	—	—	—

N/R: No Report.

BUILDING PERMITS ISSUED

	1 Family	*Mobile Homes*	*Duplex*	*3-4 Families*	*5 or More*	*Total Units*
MOHAVE CO.	42	88	3	2	2	209
Kingman City	6	1	3	1	—	17
Kingman Area	5	35	—	—	—	40
Lake Havasu City	10	—	—	1	2	79
Lake Havasu Area	—	2	—	—	—	2
Mohave Valley N.	11	29	—	—	—	40
Mohave Valley S.	5	10	—	—	—	15
Dolan Springs	1	6	—	—	—	7
Sacramento Val.	1	4	—	—	—	5
Mohave General	3	1	—	—	—	4
NAVAJO CO.	60	11	—	—	—	71
Holbrook	—	—	—	—	—	—
Show Low	1	2	—	—	—	3
Snowflake	1	—	—	—	—	1
Taylor	—	4	—	—	—	4
Unincorporated	54	5	—	—	—	59
Winslow	4	—	—	—	—	4
PIMA CO.	311	233	14	4	6	719
Marana	—	—	—	—	—	—
Oro Valley	2	—	—	—	—	2
South Tucson	—	—	—	—	—	—
Tucson	129	51	14	4	6	355
Unincorporated	180	182	—	—	—	362
PINAL CO.	68	43	2	4	4	179
Apache Jct.	19	14	—	1	—	37
Casa Grande	33	—	2	2	4	93
Coolidge	—	1	—	—	—	1
Eloy	—	—	—	—	—	—
Florence	1	—	—	—	—	1
Kearny	—	—	—	—	—	—
Mammoth	—	—	—	—	—	—
Superior	—	—	—	—	—	—
Unincorporated	15	28	—	1	—	47
SANTA CRUZ CO.	10	—	—	—	—	10
Nogales	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	—	—	—	—	—	—
Unincorporated	10	—	—	—	—	10
YAVAPAI CO.	116	61	3	1	—	187
Chino Valley	5	6	—	—	—	11
Clarkdale	—	1	—	—	—	1
Cottonwood	1	2	—	—	—	3
Jerome	—	—	—	—	—	—
Prescott	19	1	—	—	—	20
Prescott Valley	20	12	3	—	—	38
Unincorporated	71	39	—	1	—	114
YUMA CO.	18	34	1	—	—	54
Parker	1	1	—	—	—	2
Somerton	3	—	—	—	—	3
Unincorporated	9	31	—	—	—	40
Wellton	—	—	—	—	—	—
Yuma	5	2	1	—	—	9
Total, Maricopa Co. July 1981	743	138	2	10	12	1,071
Total, Maricopa Co., July 1980	919	150	31	25	54	2,189
Percent Change	-19	-7	-93	-59	-77	-51
Total, Arizona July 1981	1,512	721	26	22	24	2,762
Total, Arizona July 1980	1,768	633	38	33	59	3,944
Percent Change	-14	13	-31	-33	-59	-29

Retail Food Prices

JULY, 1981

Retail food prices in Maricopa County rose 0.5 percent in July, following a 0.9 percent gain in June. The food price survey is compiled by the Bureau of Business and Economic Research, College of Business Administration, at Arizona State University. Cosponsor of the study is Valley National Bank. The July index of 267.1 indicates that shoppers would now have to pay $26.71 for a basket of foods that would have cost $10.00 in 1967. These foods could have been purchased for $24.10 one year ago. The July, 1981, index reflects a 10.8 percent increase over July, 1980, value.

Gains were noted for *Meats, Poultry, Fish, and Eggs* (2.5 percent) and *Cereals and Bakery Products* (0.4 percent). *Fruits and Vegetables* fell 1.8 percent, while *Dairy Products* and *Other Foods* were unchanged.

Sharp increases in chicken prices contributed to the gain in *Meats, Poultry, Fish, and Eggs* during July. Fresh whole chicken soared 22.2 percent, followed by fresh/frozen chicken parts (12.4 percent). Pork prices also rose, notably bacon (12.9 percent), pork other than bacon, chops, ham, and sausage (9.2 percent), and pork chops (5.5 percent). Partially counteracting these advances were reductions in the miscellaneous beef category (-6.6 percent), primarily due to lower prices for beef short ribs.

Minor price fluctuations in the *Cereals and Bakery Products* subgroup led to the overall 0.4 percent increase. Cereal rose 2.7 percent, while higher prices for rice led to a 1.7 percent increase in the category of rice, macaroni, and cornmeal.

The decline in the *Fruits and Vegetables* subgroup, the first decline since November, 1980, was caused mainly by lower prices for several fruits in the category of fresh fruits other than apples, bananas, and oranges (-22.8 percent). Tomato prices plunged 15.1 percent, while falling prices for carrots, celery, and cucumbers contributed to the 4.1 percent decline in the miscellaneous fresh vegetables category. Higher prices were noted for oranges (up 12.6 percent), bananas (4.5 percent), and lettuce (3.8 percent).

Prices were relatively stable in the *Dairy Products* subgroup in July, resulting in no change in the subgroup's index value. However, although there was also no overall change posted for the *Other Foods* subgroup, there were several notable price changes within that subgroup. Margarine dropped 5.9 percent, followed by sugar/artificial sweeteners (-5.1 percent) and frozen prepared food (-3.5 percent). Offsetting these declines were gains in several categories, notably miscellaneous canned/packaged prepared foods (3.1 percent), and nuts, potato chips, and other snacks (2.0 percent).

A comparison of June, 1981, Food Consumed at Home for Maricopa County with index values for four selected metropolitan areas reveals that the outlays required to purchase a food group in June, 1981 (obtainable for an outlay of $10.00 at 1967 average prices), were $26.56 in Maricopa County; $26.98 in Los Angeles-Long Beach; $26.64 in San Francisco-Oakland; $26.81 in Chicago-Northwestern Indiana; and averaged $26.87 in the United States.

TABLE 1

INDEX FOR FOOD CONSUMED AT HOME
Maricopa County, United States, and Selected Metropolitan Areas
(Average 1967 = 100 percent)

Group	*Maricopa County July '81*[a]	*Maricopa County June '81*[b]	*United States* * *June '81*	*Los Angeles Long Beach* * *June '81*	*San Francisco Oakland* * *June '81*	*Chicago North-western Indiana* * *June '81*
Food Consumed at Home	267.1	265.6	268.7	269.8	266.4	268.1
Cereals and Bakery Products	256.6	255.5	271.5	285.5	279.9	278.1
Meats, Poultry, Fish, and Eggs	264.1	257.6	248.7	247.9	244.9	252.7
Dairy Products	232.3	232.3	243.8	238.2	239.9	234.0
Fruits and Vegetables	268.9	273.8	278.1	268.0	262.8	276.5
Other Foods Consumed at Home	295.0	295.0	323.6	328.5	332.6	325.8

*Computed from data contained in *The Consumer Price Index*, U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

[a] Maricopa County food prices are reported for the month closest to publication.

[b] Comparisons of food prices among various cities and the United States average are made on the basis of an earlier month because of the lag in collecting price reports from these other areas.

Note: Index comparisons between Maricopa County and the other regions show only that food prices in Maricopa County have increased more or less than food prices in the other regions since 1967. The indexes cannot be used to determine the actual difference in food price levels between the regions.

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperative cosponsorship with Valley National Bank.

Retail Food Prices

AUGUST, 1981

Retail food prices in Maricopa County rose only 0.3 percent in August, following a 0.5 percent increase in July. The food price survey is compiled by the Bureau of Business and Economic Research, College of Business Administration, at Arizona State University. Cosponsor of the study is Valley National Bank. The August index of 268.0 indicates that shoppers would now have to pay $26.80 for a basket of foods that would have cost $10.00 in 1967. These goods could have been purchased for $24.47 one year ago. The August, 1981, index reflects a 9.5 percent increase over the August, 1980, value.

This month's increase was the result of slight gains in all but one subgroup. *Fruits and Vegetables* rose 1.[illegible] percent, followed by *Meats, Poultry, Fish, and Eggs* (0.4 percent), *Cereals and Bakery Products* (0.2 percent), and *Dairy Products* (0.1 percent). *Other Foods* declined 0.3 percent.

All but three categories in the *Fruits and Vegetables* subgroup posted increases this month. Tomato prices rose 11.6 percent, followed by apples (9.9 percent) and miscellaneous fresh fruits (9.8 percent). The three categories with price reductions were oranges (-34.4 percent), potatoes (-6.3 percent), and bananas (-6.1 percent).

The overall 0.4 percent increase in the *Meats, Poultry, Fish, and Eggs* subgroup does not reflect the many price changes that occurred within this subgroup during August. Sizable gains were noted for eggs (7.6 percent), round steak (7.1 percent), and poultry other than fresh chicken and frozen chicken parts (6.9 percent). These increases were moderated by falling prices in the miscellaneous pork category (-6.1 percent), followed by pork chops (-5.3 percent), fresh whole chicken (-4.4 percent), and sirloin steak (-4.0 percent).

Price changes were relatively minor in both *Dairy Products* and *Cereals and Bakery Products*, resulting in small overall gains in the subgroups. A 6.3 percent decline for ice cream and related products was unable to completely offset increases in other *Dairy Products* categories, notably miscellaneous dairy products (up 3.3 percent), and cheese (1.4 percent). In the *Cereals and Bakery Products* subgroup, climbing prices for rice continue to account for the increases in the category of rice, macaroni, and cornmeal, which rose 2.4 percent this month. Other gains were noted for fresh biscuits, rolls, and muffins (4.2 percent) and for flour and prepared flour mixes (1.3 percent). The 3.9 percent drop in the sweet roll, coffeecake, and doughnut category was primarily due to store specials.

Decreases were posted in many categories in the *Other Foods* subgroup this month. Roasted coffee prices, which have dropped each month since October, 1980, fell an additional 3.1 percent in August. Prices also decreased for freeze-dried and instant coffee (-1.4 percent), other noncarbonated beverages excluding coffee (-1.3 percent), and cola drinks, excluding diet cola (-1.1 percent). These declines were partially offset by higher prices for margarine (4.0 percent), frozen prepared food (2.3 percent), and sugar/artificial sweeteners (1.4 percent).

A comparison of July, 1981, Food Consumed at Home for Maricopa County with index values for four selected metropolitan areas reveals that the outlays required to purchase a food group in July (obtainable for an outlay of $10.00 at 1967 average prices) were $26.71 in Maricopa County; $27.06 in Los Angeles-Long Beach; $27.23 in San Francisco-Oakland; $26.94 in Chicago-Northwestern Indiana; and averaged $27.16 in the United States.

TABLE 1

INDEX FOR FOOD CONSUMED AT HOME

Maricopa County, United States, and Selected Metropolitan Areas

(Average 1967 = 100 percent)

Group	*Maricopa County Aug. '81*[a]	*Maricopa County July '81*[b]	*United States*• *July '81*	*Los Angeles Long Beach*• *July '81*	*San Francisco Oakland*• *July '81*	*Chicago North-western Indiana*• *July '81*
Food Consumed at Home	268.0	267.1	271.6	270.6	272.3	269.4
Cereals and Bakery Products	257.2	256.6	272.4	284.2	281.8	275.7
Meats, Poultry, Fish, and Eggs	265.2	264.1	254.1	252.0	256.4	255.7
Dairy Products	232.5	232.3	244.2	239.3	240.9	233.8
Fruits and Vegetables	272.3	268.9	284.4	263.2	268.1	286.1
Other Foods Consumed at Home	294.7	295.0	323.3	329.1	336.2	322.6

•Computed from data contained in *The Consumer Price Index*. U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

[a] Maricopa County food prices are reported for the month closest to publication.

[b] Comparisons of food prices among various cities and the United States average are made on the basis of an earlier month because of the lag in collecting price reports from these other areas.

Note: Index comparisons between Maricopa County and the other regions show only that food prices in Maricopa County have increased more or less than food prices in the other regions since 1967. The indexes cannot be used to determine the actual differences in food price levels between the regions.

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperative cosponsorship with Valley National Bank.

Food Price Comparisons:

APRIL, MAY, 1981

Editor's Note: New procedures have enabled comparison food prices to be somewhat more current than was possible previously. The June/July issue of Arizona Business carried comparison figures for February and March, 1981. This issue carries comparison tables for June and July in the articles on the previous pages. The following tables of comparison food prices for the interim months of April and May are given to provide a continuous series for the convenience of readers who need to maintain continuity of information.

TABLE 1

APRIL INDEX FOR FOOD CONSUMED AT HOME
Maricopa County, United States, and Selected Metropolitan Areas
(Average 1967 = 100 percent)

Group	*Maricopa County Apr. '81*	*United States* Apr. '81*	*Los Angeles Long Beach* Apr. '81*	*San Francisco Oakland* Apr. '81*	*Chicago North-western Indiana* Apr. '81*
Food Consumed at Home	259.2	268.7	269.2	270.9	268.3
Cereals and Bakery Products	250.1	268.3	282.9	278.4	272.9
Meats, Poultry, Fish, and Eggs	255.4	247.7	248.2	252.0	252.4
Dairy Products	231.4	243.5	238.2	239.0	233.6
Fruits and Vegetables	251.8	281.9	268.3	274.1	278.8
Other Foods Consumed at Home	289.0	324.7	326.6	335.5	328.8

*Computed from data contained in *The Consumer Price Index*, U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

Note: Index comparisons between Maricopa County and the other regions show only that food prices in Maricopa County have increased more or less than food prices in the other regions since 1967. The indexes cannot be used to determine the actual differences in food price levels between the regions.

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperative cosponsorship with Valley National Bank.

TABLE 2

MAY INDEX FOR FOOD CONSUMED AT HOME
Maricopa County, United States, and Selected Metropolitan Areas
(Average 1967 = 100 percent)

Group	*Maricopa County May '81*	*United States* May '81*	*Los Angeles Long Beach* May '81*	*San Francisco Oakland* May '81*	*Chicago North-western Indiana* May '81*
Food Consumed at Home	263.2	267.7	269.3	266.9	265.7
Cereals and Bakery Products	252.0	270.0	282.9	279.6	273.7
Meats, Poultry, Fish, and Eggs	256.6	247.0	246.2	249.1	249.5
Dairy Products	232.9	243.8	238.4	237.6	230.9
Fruits and Vegetables	262.1	276.8	270.1	257.1	273.2
Other Foods Consumed at Home	294.7	321.3	328.6	334.2	326.7

*Computed from data contained in *The Consumer Price Index*, U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

Note: Index comparisons between Maricopa County and the other regions show only that food prices in Maricopa County have increased more or less than food prices in the other regions since 1967. The indexes cannot be used to determine the actual differences in food price levels between the regions.

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperative cosponsorship with Valley National Bank.